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Telephony

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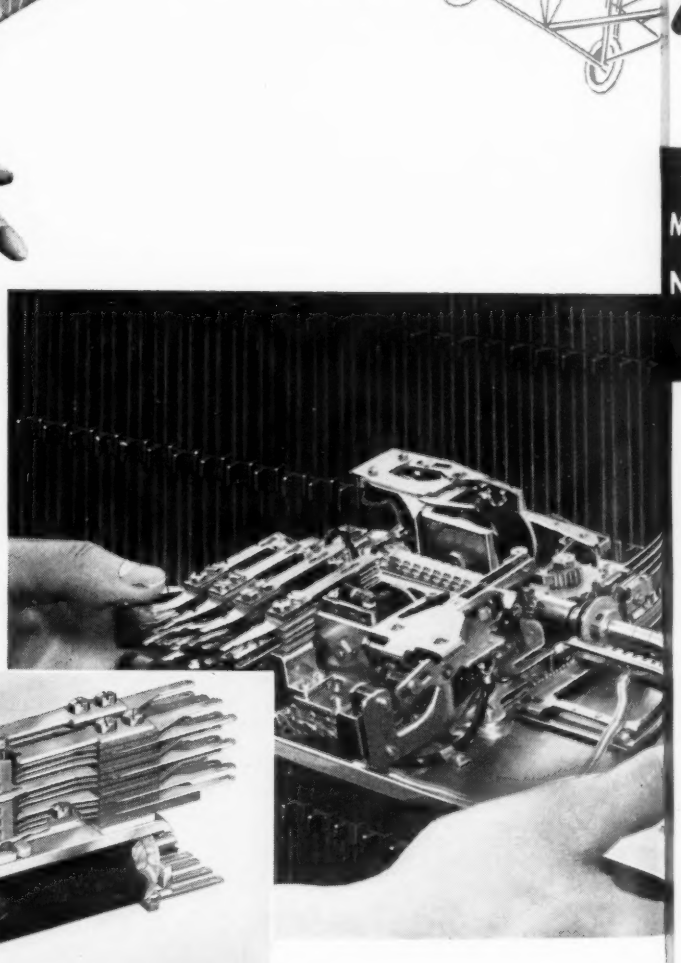

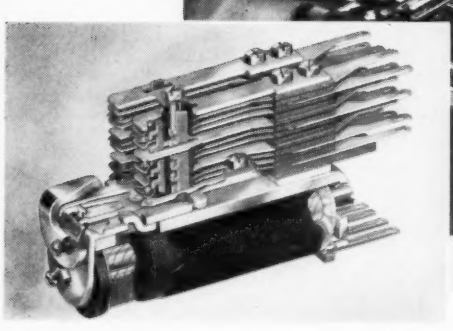

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EVERYTHING IN TELEPHONE EQUIPMENT

FLASHES AND PLUGS

BURNING BEANS. Judge Edward W. Meyers of Allen County Court No. 1 at Fort Wayne, Ind., is slow to anger.

However, when he picked up his party line telephone the other day just in time to hear a woman's voice say: "I've just put on a pot of beans to boil," he discreetly hung up.

Fifteen minutes later he lifted the receiver to hear the same two voices. Once more he replaced the receiver. A half-hour from the time he first tried to call, he again picked up the telephone and heard the conversation still going.

"I think I smell beans burning," interposed the judge.

And two receivers slammed down simultaneously.

• • •

CHIVALROUS FIREMEN. A meek voice recently asked the Wakefield, Mass., firemen over the telephone if they would do a woman a great favor.

They indicated they might.

"Well," asked the woman caller, "Will you turn off the gas in my home and save the carrots?"

She explained that she was in Topsfield—20 miles away—and had left the gas burning under a pan of carrots.

The firemen saved the carrots—and possibly the house from an explosion.

• • •

IGNORANCE IS BLISS. The attractive receptionist-secretary was a well-poised young lady, but she was momentarily at a loss for words one day.

A caller was telephoning for some information which was not readily at hand and she informed him she would have to call him back.

"What is your telephone number, please?" she asked.

"Darned if I know," the caller said, airily. "I never call myself, so I don't know."

• • •

FOUR O'CLOCK ORATORY. Scores of residents near Trinity Methodist Church in Rahway, N. J., one morning recently deluged police headquarters with telephone calls at 4 a.m. after they were awakened by the stentorian tones of a "preacher" pleading for the welfare of children. The police traced the "voice in the night" to the church, which has a loud speaker system connected with the church tower.

A police radio crew visited the church, which is being renovated, but found the pulpit vacant. Later, however, they traced the sermonizing to a brother officer. He had checked the doors and found them secure. He had checked the basement windows and found one of them open and had crawled in to investigate.

Unaware that the loud speaker system was connected with an outdoor amplifier he took the opportunity to try out his oratorical powers—with a voice that awakened persons for several blocks.

• • •

CRIME GETTING HARDER EVERY DAY. "Speed Photo"—a device which sends photographs and fingerprints by telephone—nabbed its first quarry on July 22 when a man wanted for a holdup in Connecticut was seized in the Bronx, New York.

In the space of 20 minutes, the photos and fingerprints were wired from New York to Hartford, the suspect was identified by his alleged victims, and the order came back to New York for the arrest.

The suspect was seized at his home on a charge of participating in an $800 holdup in South Windsor, Conn., on June 30.

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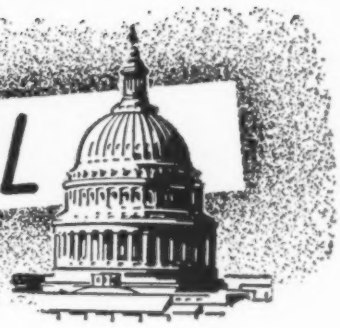
IN THE NATION'S CAPITAL



BY FRANCIS X. WELCH
WASHINGTON EDITOR

Government departments plan to play important roles in mobilization picture, with NSRB in supplementary role. . . . Industry representatives getting ready to formulate protective proposals regarding tax increases. . . . REA grants loan to North Carolina cooperative.

Bureaucratic "Rat Race"?

THESE are the days in Washington when the Man with the Plan is an important figure on the bureaucratic landscape. It doesn't make too much difference whether the plan will work or not. If it sounds sensible and, especially if there are no other plans dealing with the subject at hand—it is often accepted by default. It was in just such a situation that former Secretary of Interior, Harold Ickes, managed to wangle his way into about 15 important jobs just prior to Pearl Harbor, becoming one of the most powerful men on the civilian mobilization front.

The formula is simple for grabbing war power controls. If you are the head of an agency and you would like to have certain powers, you just jump in the driver's seat and let Congress know that you have a Plan to take care of the mobilization needs of the nation in this, that, or the other field. In the absence of any other available plan, it is possible for an agency boss to grab himself off a nice bundle of war powers, as easily as that. But there is plenty of rivalry and jockeying for position on this Washington race track, which has come into being almost over night in the wake of the Korean outbreak.

Congress is busy with the terrific problem of raising the billions sought by President Truman. But the administrative branch of the federal government now knows that the decision has been made at the top level to gear our national economy to an increasing rate of mobilization for the next two years. Some of the Republicans would even go further, as would our celebrated elder statesman Bernard M. Baruch.

He takes the position that if we need mobilization at all, we need full mobilization right away before inflation and other mischief gets a head start. Halfway mobilization, he argues, may be worse than no mobilization at all. At least it might prove to be the most expensive way of proceeding towards full mobilization. In other words, halfway mobilization could turn out to be something like the second best hand in a poker game—which is generally the most expensive kind of a hand to hold.

Leaving the degree and tempo of mobilization to one side, however, all the federal agencies are beginning to take inventory of their own positions, in order to see how they fit into the new picture. Some of them seem unlikely to play very important roles. The Rural Electrification Administration, for example, may eventually have to go into low gear and even move out of the Nation's Capital.

If military needs for copper wire, as well as other strategical materials and man power, make it imperative to call a temporary halt or slowdown on connecting farms with electricity and telephone service, then REA will have to slack off. That was REA's experience during World War II.

But some of the old-line departments, which ordinarily go into an eclipse during a war emergency, have no such ideas about taking a back seat during this Korean business and what may come after it. The Agriculture Department, Commerce Department, and Interior Department, all have their plans worked out for playing important roles in the new mobilization picture.

Their argument, which is plausible enough in a way, is simply this: Instead of creating a bunch of new war agencies such as OPA, WPB and so forth—all of which would have to start from scratch on the organization of staffs and administrative "know how"—why not let the old line bureaus take over the new "wartime" functions? Then—if optimistic hopes prove to be true, and the mobilization phase can slow down in the event of a Korean victory with no global repercussions elsewhere — the old-line departments could simply revert to their former routines. Less fuss and feathers and less expensive all around.

NSRB Willing to Play Supplementary Role

That is the argument. Strangely enough, Stuart Symington, chairman of the National Security Resources Board, seems disposed to go along with this. It had been generally assumed that the NSRB would take over, in such a crucial time, a role similar to the old War Production Board during World War II. That may still be the way things will work out, but not without rivalry. Gossip critical of NSRB is being circulated. The Interior Department seems headed for a top control spot over the allocations of petroleum, natural gas, and solid fuels.

Commerce Secretary Sawyer told a congressional committee last week that he thought the Interior Department would most likely handle the rationing of electric power, if shortages develop, which he seems to expect. Communications, as such, have not been generally mentioned. But they would quite possibly be fitted into the Commerce Department orbit of control, along with the railroads and the air lines (which are already there). Regular federal regulatory commissions may even be banished from the Nation's Capital, leaving war control "czars" (for gas, power, transportation, and communications) to take over important emergency functions.

In other words, the main concern in Washington right now among the federal bureaus is the delegation of emergency powers. Instead of wondering about *what* has to be done, they are wondering chiefly about *who* will have the controlling powers.

Now if this all seems to be getting pretty far ahead of the picture, we must remember that now is the forma-

tive period for any future war control pattern to be followed by the federal government. An agency which manages to get the inside track, at this time—before outright price controls, rationing, etc., are definitely decided—will be in a position to take over the important posts of authority, when the actual need comes along at a later date. For this reason, plans and designs are mushrooming. Just about everybody you meet walking along Pennsylvania avenue, these days, has a Plan under his arm.

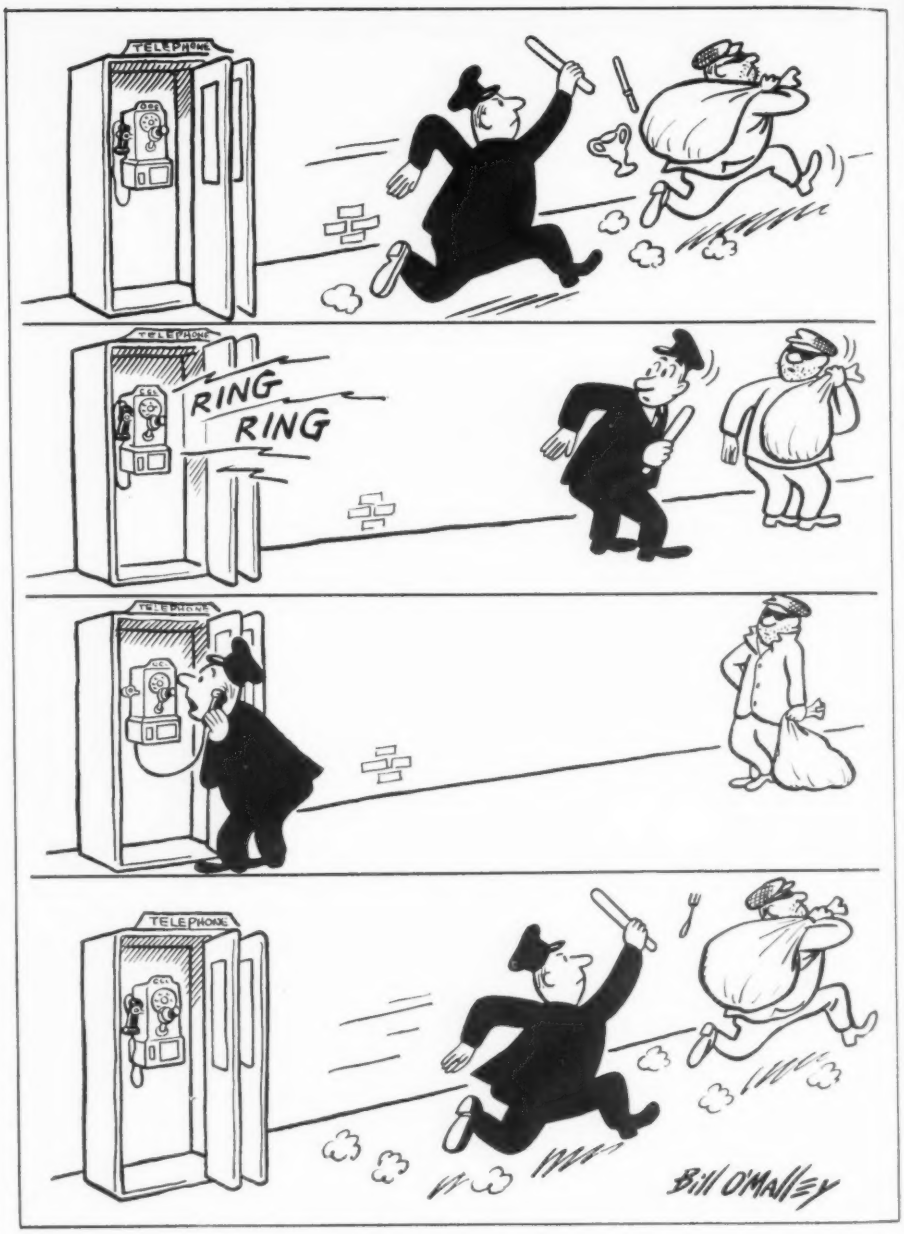
Federal officials are busy trying to get the ear of congressional committees to sell their particular arguments on how various necessary mobilization functions on the home front ought to be carried out. Labor representatives have been exceedingly active trying to move into this picture. So far, industrial, state, and local government interests have not been able to get into a very prominent spot. But they are, doubtless, doing all they can, considering the disadvantage of their outside position and the sudden character of the situation.

Shades of WPB

Judging by past performances—going all the way back to World War I—the chances are good that whatever form of organization is set up to take care of the civilian front during the new mobilization—there will be changes made before it shakes down to an effective and permanent organization. Most of the readers will recall the unhappy succession of new agencies during World War II, which were called into existence by the late President Roosevelt to mobilize our national economy.

Before Pearl Harbor there was the National Defense Advisory Commission (1940) which had no chairman but was nominally headed by William S. Knudsen of General Motors, who had to share powers with four other persons. The following year this gave way to the old Office of Production Management, which was a two-headed (rather than a four-headed) organization. Chairman Knudsen had to share his power with a labor leader, the late Sidney Hillman. But this was another flop. In the fall of the same year (1941) President Roosevelt called into being a new creature nicknamed SAPB (supply, allocation, and priority board). But even this agency, with increased powers, was unable to balance the demands of military needs against civilian production.

The real trouble was that most of the powers stayed on President Roosevelt's desk, for the simple reason that he seemed to find it impossible to let them get out of his own control. He finally did so, to a certain extent, in 1942 when the War Production Board was created under Donald M. Nelson. Later, it will be recalled that an Office of War Utilities was created within the WPB, including a communications division. But even WPB had to share certain powers over the national economy with the Office of Price Administration charged with fixing retail prices and rationing consumer goods.



Maybe this new idea of NSRB Chairman Symington, to let the old-line bureaus take over mobilization controls for our civilian economy, is a good one. Maybe, on the other hand, it would fill up the necessary jobs with a bunch of bureau hacks to the exclusion of industry people who have knowledge of what they are doing. If so, this defect would more than offset any advantage claimed for using existing organizations, rather than starting from scratch with new temporary agencies. It is a difficult problem of organization. And it must be settled by an administration which has not, so far, shown any particular genius for economic and efficient organization.

On the Tax Front

The telephone industry and other public utility industries seem to be getting in shape for necessary representation in Congress on forthcoming tax *increase* legislation. Congressional committees are already busy on the President's request for an intermediate (effective Oct. 1) roll back of personal income taxes to the 1945 level, plus increases in corporate taxes to 45 per cent of earnings over $25,000. But this is just stop-gap regulation. The real cause for concern, in all lines of regulated public utility enterprise, is the threat of excess profits tax legislation to start next year.

(Please turn to page 40)

PRACTICAL PUBLIC RELATIONS

By E. H. WASSON
Vice President
Northwestern Bell Telephone Co.
Omaha, Neb.

THROUGHOUT my business life, all of which has been spent in the telephone business, I have done considerable moving about over a pretty large territory. Until very recently, that territory was all south of the Mason and Dixon Line. A few months ago, however, I bought some furlined garments and moved from Atlanta, Ga., to Omaha, Neb.

I have had a lot of very pleasant experiences since I became a northerner. But the one thing that makes the greatest impression on me is that no matter where you go—south, north, east or west—telephone people are all alike—the best on earth.

It is a peculiar fact — and I am sure that every one of you is just as familiar with it as I am—that wherever a telephone man goes, he feels that he is among friends as soon as he meets a group of other telephone people. And when I say telephone *man*, I mean telephone *women*, too.

Now there is an old saying to the effect that among friends one may speak freely, so I am going to speak freely, but I hasten to add that by "freely" I do not mean indefinitely or at great length. What I have to say can be said briefly.

I want to discuss with you for a few minutes the matter of public relations in our industry. Public relations, as I see it, has always been an important part of our business and I believe there never was a time when it was quite as important as it is right now.

As a matter of fact, I think that statement is applicable to every other business in this country, too, because *all* business—all private enterprise—is under fire today, not only from abroad but from certain elements, some vicious and some just fuzzy-minded, in our own country.

However, since we are all telephone people, I am going to confine my remarks to the matter of practical public relations in our own business.

It seems to me that no matter whether your company is big or little and no matter what your position in that company may be — office boy, president or the fellow who furnishes the capital—your life is affected, for better or for worse, by the kind of public relations your company enjoys —or fails to enjoy.

What *is* public relations?

I wish I could define it as clearly and as briefly as some definitions that recently came across my desk. Every so often we hear people go into long discourses of what their ideas are of Communism, Socialism and the many other "isms" that surround us, but for clarity and brevity of expression, I think the following takes the blue ribbon:

SOCIALISM—You have two cows and give one to your neighbor.

COMMUNISM—You have two cows, the government takes both and gives you the milk.

FASCISM—You have two cows; the government takes both and sells you the milk.

NAZISM—You have two cows; the government takes both and shoots you.

NEW DEALISM — You have two cows; the government takes both, shoots one, milks the other and throws the milk away.

CAPITALISM—You have two cows; you sell one and buy a bull.

I am sorry that I can't make my definition of public relations quite that "snappy."

I am going to suggest that public relations may be defined as that function of a business designed to earn for it a good reputation with the public, establish and maintain it in the public mind as an institution of character and as an institution which operates always in the public interest.

After all, anybody who does business directly or indirectly with the public is in a public business and subject to regulation by the public in many ways —by a great variety of laws; by the giving or the withholding of patronage; and by praise or blame from public leaders, radio commentators and the press.

So the public lays down the rules for its service, partially in laws and partially in the market place. The task which any business has, and which it has always had, of fitting itself to the pattern of public desires and of creating new public desires—has come to be called public relations.

It is a popular phrase nowadays, and there are some who practice the trade who would have you believe it is a new science so mysterious that it can be practiced only by a few learned experts. Others, by their actions, seem to think it is merely a fancier name for the press agent, whose yardstick of success is a bulging scrapbook of newspaper clippings.

All of this merely confuses the average business man who is sincerely attempting to evaluate the importance of public relations to his company. Of course, there is much more to public relations than a good story in the papers or a catchy singing jingle on the radio that tells people not to put bananas in the refrigerator.

What I'm trying to say is that public relations, essentially, is as old as business itself. Man wasn't on this earth long, I'm sure, before he discovered the necessity of being a good neighbor. And the first business men —whatever they did for a livelihood —soon discovered the advantage of being on friendly terms with their fellow men.

Present-day public relations is not confined alone to the so-called "big business" either, for even the small-town corner grocer instinctively knows that, to prosper, he must sell good products, that he must be courteous and pleasant to his customers and that he must have a reputation for fair dealing. Ask him about it, and he won't call it public relations. No, to him, it is just "good business," or "common sense," or some other name, perhaps, but it is public relations all the same.

So much for what public relations *is*.

How does one go about making it *work?*

As we in the Bell telephone companies see it, there are several funda-

mentals necessary to an effective public relations program.

First, it stands to reason, there must be a management alive to its public responsibility.

Second, there must be a competent and well-informed personnel.

And third, there must be effective procedures for publicizing the product and keeping the public generally informed of the company's accomplishments and of the problems surrounding the business.

Above everything else, good public relations begins with performance. This means that, in addition to being aware of its responsibility to the public, management must have the desire and the will to do the right thing. It must be consistent in what it says and does. That is, it cannot successfully think and talk one way and act another.

Good intentions translated into a quality product or service are the bedrock on which a company's relations with the public rests. An organization can have the highest ideals of service — the walls of its offices can be adorned with the most commendable mottoes there are—but if its service consistently doesn't measure up to high standards, then all the publicity and advertising you can muster won't convince the public that it is a good company. Advertising, no matter how good, can't make a sow's ear look like a silk purse to the man in the street.

Granted that company management *has* the will to do the right thing, the next important step, I think, is to have someone (and if *you* are the management, then that someone is you) assume the responsibility of seeing to it that, in the hustle and bustle of day-to-day operations, the business doesn't deviate from its principles by inattention or neglect, and that the details of the public relations policy are changed to meet changing conditions.

After going this far to recognize the importance of the public relations function, it follows that the person charged with this responsibility should be an active member of the policy-making management. But if it is to be successful, it cannot be an isolated function. It is common sense that good public relations can come about only when *all* people in the organization are working at it.

The fellow who has the chief responsibility is most successful when his associates in the business are in such a frame of mind that they wouldn't dream of making any major decision without first thinking of the public relations pros and cons—and, too, when from force of habit they will take the initiative in doing things themselves to improve the company's standing with the public.

P. M. FERGUSON, SR., general manager, Mankato (Minn.) Citizens Telephone Co., surrounded by floral tributes, and sampling a cake, presented to him at his recent celebration of his 50th year of service in the telephone business. Mr. Ferguson also received congratulatory telegrams, letters and telephone calls from many of his host of friends in the industry. He has been prominent in industry affairs in both Minnesota and nationally, serving the state and national associations as a director and officer for many years.

This brings me to the second point which appears fundamental to a successful public relations program: A competent and well-informed personnel which is favorably disposed toward its management and toward its job.

I think all of us will agree that few things are more important to a company than the attitude of its employes —their attitude toward the company itself and their attitude to the public, and that holds good whether you have *two* employes or 2,000.

It is true that a company can have the very highest ideals of public relations at the top level, but if somehow those ideas are not made to permeate throughout the organization and thus conveyed to the public through day-to-day contacts, the program will not succeed. Worse still, *uninformed* or *misinformed* employes may well create unfavorable public relations. As we all know, *poorly trained* employes are also capable of doing untold damage to your public relations.

Of course, all the opportunities your employes may have to win friends for the company will not come during business hours. They may come in casual conversation with the neighbors across the backyard fence, they may come at a bridge party or at a lodge meeting.

And employes who speak well of a company, wherever they are, rank next to a good product or good service as a public relations asset, and to *speak* well of it, they must *think* well of it. You and I have only to consider our personal experience from childhood to maturity to know that we did things better, with far more appreciation and satisfaction, if we knew the *why* as well as the *how*.

The facts of the matter are that a great many businesses have been slow to recognize the asset value of the employe body. This is not to say that these concerns have neglected their employes, but rather that they have overlooked their potentialities as instruments of good public relations. Too often, perhaps, employes have been mere *spectators* when they should have been playing on the team.

A good employe is made a better one if he feels that he is "in the know" in the running of the business, so it is a "*must*," I think, that management do a more positive job of presenting the facts of company operations to the workers.

It is well for us all to remember this: Employes are more interested in themselves than in anything else and are more interested when they can see how company policies and procedures benefit their particular jobs, pay envelopes and future.

It is rather astonishing, but public

opinion polls show that the average American thinks that government and unions have done more to raise the living standards of workers than management.

The fact that such false notions exist is, I believe, a strong indictment of the business man. It means that business in too many cases has failed to get over to the employes and the general public all the facts—or that we have not presented the facts in the most understandable way.

Samuel Gompers, the first major labor leader and founder of the AFL, said 40 years ago, "The greatest injustice an employer can do his employes is to operate his business without a profit."

It comes down to this: Each of us and all of us have got to help our employe get himself a big pile of facts so that he can get up high enough to see the business and economic landscape for himself (or herself). And the very best place for him to get the facts about the business system is the same place where he gets his bread and butter out of that system—from the man or company he looks to for his regular paycheck.

It would seem that a logical place to start this employe information job is at the very beginning of the employe's career with the company—as an integral part of his over-all training. Here he would have established in his mind a good sense of what the company is all about, how it is organized and why, what its objectives and opportunities are, and above all, the part the individual employe plays in furnishing good service and in contributing most to his or her own success and happiness as a member of the organization.

Some of you are no doubt thinking that this phase of the public relations job is hardly distinguishable from what is called employe relations. I thoroughly agree with you. But perhaps you will also agree with me that the outcome—whatever it is called or however it is brought about—will certainly go a long way toward determining what the public relations of a company is to be.

This leads me to conclude this phase of my discussion by saying that the important thing is not *who* does the public relations job, or under what banner or title, but that the job is done.

The third fundamental of effective public relations which I mentioned a few minutes ago is a procedure for publicizing the company and the product, and otherwise keeping the public informed about the business.

Someone has said that public relations is nine-tenths doing and one-tenth talking. That, perhaps, is true, but the 10 per cent is a mighty vital part of the enterprise. Actions have to come first, but there have to be words to go with them. We all know that the best company, the best line of products in the world—or the best service—with nothing said about them will never be fully appreciated by the public.

In the Bell System, we find ourselves in rather a unique spot. Despite our best efforts—and the expenditure of hundreds of millions of dollars—we still are not yet able to provide telephones for all who want them or to furnish, in all cases, the kind of service desired. A lot of people who want one-party service are still compelled to use two or even four-party lines. Service in some localities is not as good as the public desires or as we want it to be. But we have always thought that our efforts to install more telephones and to improve service would be more appreciated if the public also knew what the problems and difficulties were, and how we were going about meeting them. So we have used publicity and advertising to talk over our problems frankly with the public.

The procedures for informing the public about any given matter are numerous and how they are utilized is, of course, highly important to the success of your public relations program. They can take the form of newspaper and magazine advertising, radio advertising, booklets, news releases, instructional leaflets, motion pictures and other media. Open houses, where the public is invited to go through your quarters, and Family Nights, where families of your employes are invited to do the same, are effective public relations instruments. Each company, of course, will utilize those media which are most uesful for its particular needs.

Although there are many groupings of these media that could be made, they largely fall into two general approaches, according to their purposes: Sales or promotional, and institutional.

Promotional advertising is designed to sell a line of products or a service. Institutional advertising tries to do the same thing for a company, its policies and its way of doing business, that sales advertising attempts to do for a service or a product.

Because the results promotional advertising achieves are often more tangible, more easily measured, it frequently gets a disproportional share of the advertising budget dollar over the institutional form.

In promotional advertising, you want the public to know the worth of some particular service and so you buy space in newspapers, you use the radio, you print booklets and sales aids to tell them about it.

I think that by the same token, a business should be cheerfully willing to utilize institutional advertising to let the public know what its policies are, what it is doing in the community and what it hopes to do. It has, I believe, practically a duty to do so.

There is still another phase of this matter of public relations at work that I should like to talk about for a moment or two. It is made up of all the varied "little things" done by employes in the day-to-day performance of their jobs and the extra things done by the company itself, in its corporate capacity. The sum total of all these things might be called "good citizenship."

Public relations begins at home. The people who make up our public are citizens as well as telephone users.

As citizens, they are likely to form judgments of a telephone company in ways other than from the use of its services.

Do its employes, as citizens, or as representatives of the company, participate actively in worthwhile community affairs?

Does the company itself contribute to civic enterprises fairly?

Do the company's employes take so wholehearted and genuine an interest in the community that it never occurs to other citizens to question their enthusiasm and freedom to act on community problems?

Are the company's operations and policies designed in the best interests of the community, and are they watched and changed to keep them that way as conditions change?

These questions point up to what is, I think, a simple truth, but one of great and continuing consequence to the success of any business. In the long run, the people's ideas of a company, good or bad, are largely determined by the little things that company does or fails to do. I am assuming, of course, a fundamentally good technical job in the production of a good product or service, and sound general policies. There is another name for it, rather than good citizenship and that is, community relations.

There are some who would have us believe that the kind of public relations consciousness that I have been discussing is an "ivory tower" outlook, a purely theoretical proposition. In my own mind and in my own experience, it

(Please turn to page 36)

Chemical Brush Control

By ELVIN DURR
Division Plant Superintendent
United Telephone Co.
Clinton, Mo.

PART II

ON THE spraying that we have done, our men leave the truck, pull the hose through the brush, and spray the brush first from the field side starting at the top and going to the bottom of the trees. Then they come to the road side and finish covering the plant. We feel this is the most economical and the safest way to secure complete coverage.

It is more economical to do a thorough first job, than it is to do a halfway job and have to do a second follow-up spraying almost equal to the first. After the foliage has been sprayed, you should not notice any difference for the first few days, but gradually the plant will show that something has happened to it. Within two or three weeks, it will look completely dead. The leaves will be brown and will hang on the plant, sometimes even through the winter months. Just because the leaves look brown and the plants look dead is no indication that they are dead, as these leaves in the much desired slow process of turning brown have translocated the chemical through the plants to the roots. This process will continue for sometime. It is not until the roots have absorbed the chemical and the carbohydrates have turned to sugar, that the plant has actually dissolved its food supply and is starved to death.

Our experience has been that a quick burning of the leaves and plant is not desired, and that a longer period is wanted for the leaf to have more time to translocate the chemical to the root.

Foliage sprays can either be applied with power sprayers or with knapsack sprayers. If you have a small company and want to first determine what the chemicals will do, we would suggest that you first purchase a knapsack sprayer as you will definitely do more good with it than you can do with an axe. Then, too, at a future date when you have finished experimenting, you will have a definite place in your brush control program for it, and the cost will not be wasted.

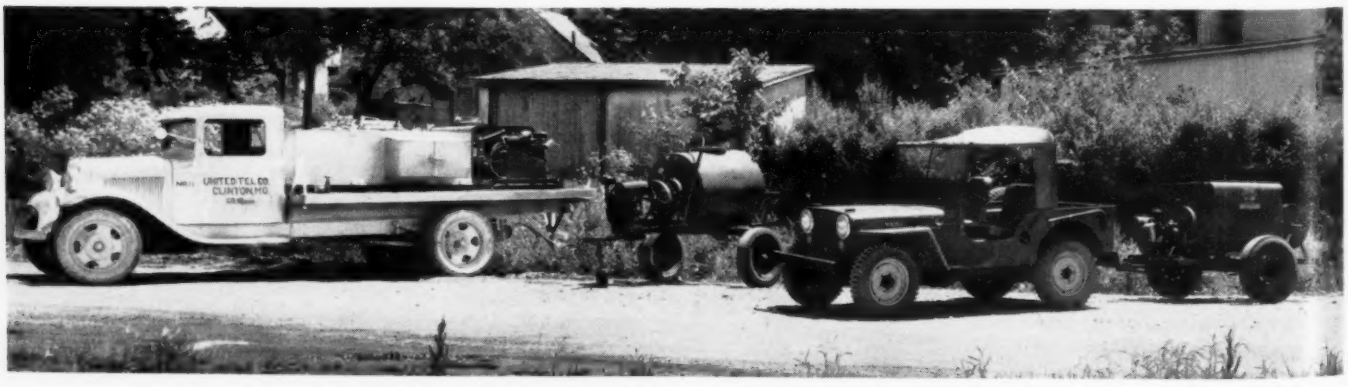
Some of the commercial sprayers using large power sprayers are driven down the road at a few miles an hour and the brush is sprayed from a truck. We do not recommend this type of application. First, the danger of the spray mist drifting to unwanted areas has been increased. Second, complete coverage cannot be had by this fast method of application. Third, it is not an economical way of application as much material is wasted.

Another form of applying the chemical is to the stump in order to eliminate the resprouting of the brush and trees that have been cut. Even now there will be many instances where the trees and brush will have to be cut and removed, and the stump treated in order to eliminate resprouting. Think back over the years that we have been cutting trees and brush, how nice it would have been if those stumps would not have resprouted. I am sure that your conclusion will be that your brush problem today would be much less if we had had chemical brush control.

The mixture of chemical for stump treatment differs from that of foliage treatment in that the material used for stump treatment is mixed with oil and is much more concentrated than the foliage spray. The chemical should be mixed with fuel oil or kerosene as the carrier according to the amount of acid contained in the esters, and in the manner prescribed by the maker. We have been very successful in the treatment of stumps with 2, 4, 5-T alone, and we believe that the importance of this chemical is increasing. The time to apply the chemical to the stump is right after the tree has been cut and at least within three days. This can be done 12 months a year.

This chemical can be applied by painting the top and the sides of the stump with a paint brush, or better yet by using a knapsack sprayer and spraying the top of the stump and the bark to the ground line. Each one of our service trucks carries as standard equipment a three gallon knapsack sprayer containing chemical to treat all stumps of the trees and brush they cut. After you have finished with any experimenting that you may do with your knapsack sprayer, it can be used to a good advantage in stump treating.

We have contacted many chemical companies as to the advisability of adding a dye to the chemical when it is mixed with oil. We wanted to know if there were any objections to the addition of this dye due to any effect that the dye might have on the chemical. We had several favorable replies, and also names of companies that made dyes. Therefore, we are now adding a dye to the chemical that we use for stump control, and dormant and basal treatment. As far as we know, to date



Some of the power spraying equipment being used this year by the United Telephone Co.

the companies that are making these chemicals for brush control have no dye in their product. The reason for using a dye is to identify stumps that have been treated. Then, too, the man treating the stumps can determine how complete a coverage he has had, and whether he has wasted the material on the ground.

Dormant treatment of brush can readily be done with a knapsack sprayer and the chemical used for this is mixed with oil, the same as for stump control. The brush is sprayed during the winter months when the plant is dormant. We have done some dormant spraying, but we have not done it long enough for it to be out of the experimental stage, so we cannot definitely pass on our results. Many chemical companies and state experimental stations are reporting successful application of this type of treatment. We have sprayed a combination of the two chemicals during the dormant stage and also just 2, 4, 5-T, and from the results which we have had from the dormant spraying we did last winter, we feel that this method has promising possibilities.

Our results also show that 2, 4, 5-T is more effective for the dormant spray than 2, 4-D. Dormant spraying, like foliage spraying, should be done thoroughly in order to eliminate the second application. After frost, last fall, before storing our power sprayer, we emptied the foliage spray out of it on three spans of small brush containing several varieties, including some osage orange. Even though this foliage spray, not too concentrated and with water used as a carrier, was applied during the dormant period, good results were obtained. These plants were abnormally active in mid-winter and seemed to have life by mid-spring. Much to our surprise, however, they did not live and much of the brush is now dead, with a small percent of resprouting. For some unknown reason some elm which was in this brush, which is usually very easy to kill, today shows no ill effects of this dormant treatment. Remember, this was not intended as a dormant treatment, but was used in this manner only for cleaning our spray for storage. The actual dormant spraying that we have done, using oil as a carrier in a concentrated solution, shows promising results.

Spraying on the inside of fences to get complete coverage of right-of-way.

One of the power sprayers in use by the United Telephone Co.

Filling one of the United company's sprayers and reserve tanks with 650 gallons of water with a jet filler from a farm pond.

Another method of applying the chemical is by the basal treatment. In this method you use the same chemical as for stump treatment and for dormant spraying. The chemical is applied to the bark, starting two or three feet from the ground and spraying down on the bark to the ground line. It is also well to treat those portions of the roots that you see above the top of the ground near the base of the tree. Last year we treated some trees in this manner and found that they have not only been killed, but they have deteriorated rapidly. The leaves on the trees and brush to which we have given the basal treatment this spring have turned brown and the trees look dead, and from all appearances the results are successful. Of course, we still have the problem of removing large trees which are killed by this method. It might have been cheaper initially to cut the tree and treat the stump, but you will find wide use of this method,

and we feel that the number of such applications will increase.

What actually happens when these chemicals are applied can be explained in this manner. A hormone action takes place, causing the plant to burn its supply of carbohydrates. In doing so, these chemicals stimulate the growth process of the plant to excess, causing death.

Up until this year it was thought that something took place when 2, 4-D and 2, 4, 5-T were combined in the same product, however, we find that they are not synergistic in their action, but instead each acid operates independently. The only reason for using both materials in the same spray is to obtain control over a wider range of plants. Some plants are more susceptible to 2, 4-D than 2, 4, 5-T, and others are resistant to 2, 4-D. Unless a survey of the areas that you intend to spray is carefully made in order to determine the species of brush that are present and classify them accordingly as to what will kill them, it would be to your advantage to use a combination of 2, 4-D and 2, 4, 5-T in order to be sure to get them all.

Some of the plants that are killed by 2, 4-D are wild cherry, aspen, locust, willow, walnut, buckbrush, sage brush, honeysuckle, elm, and sumac. If some of these species were the only ones you had to kill, you would save money by applying 2, 4-D, the cheaper of the two chemicals. If your right-of-way contained only osage orange, brambles, oak, maple, persimmon, poison ivy, poison oak, spruce, and ash, then you would save money by applying only the 2, 4, 5-T as they are resistant to 2, 4-D. You can readily see that unless you predetermine what you have to control and can mix your spray accordingly, it may be best for you to use a combination of the two.

These chemicals are non-poisonous and will not injure the person applying the chemical; neither are they poisonous to farm animals. While I was watching the men attach a trailer-mounted power sprayer to a truck, the sprayer became unbalanced and the bulk of the contents of the sprayer, 150 gallons, soaked me from head to foot. I had the chemical in my eyes, ears, and nose. Although I admit I was frightened, I did not suffer any ill effects from my experience.

Naturally, if you mix chemicals with oil, and the person breathes the odor of the mixture all day, it may tend to make him nauseated. We recently read the bulletin put out by the Department of Agriculture of Michigan, written by B. H. Grigsby and E. D. Farwell, giving the results of various tests they made with chemicals in order to determine whether or not they were poisonous to livestock and poultry, and our conclusion after reading the article is that no ill effects were suffered by livestock grazing on sprayed areas.

Close-up of the hose reel designed by the United Telephone Co. for use on its spraying equipment. It saves time and preserves the hose, Mr. Durr states.

Many companies are making good knapsack sprayers. Any of their best sprayers will serve your purpose. There are several companies that have been making power sprayers of the orchard type for years, and any of their power sprayers will do a good job for you. Many of them have the sprayer mounted on a trailer with a 150 to 200-gallon tank. Some of these trailers are made for row crop spraying, but you may want to purchase a trailer or have one made that will be better fitted to highway use. The capacity of the supply tank on these sprayers is not enough to last a day. With one man operating a spray gun, it will take approximately three tanks a day, so you should arrange for a water supply along the spraying route.

In some cases, it might be best to mount your power sprayer on a truck instead of a trailer with an extra large supply tank on the same truck. The spraying equipment used with chemicals can be cleaned, but our recommendations would be that you do not use this equipment for anything else except brush control. In many instances enough of the chemical has been known to remain in the sprayers, even though they were washed out, to kill susceptible plants.

The use of chemicals in controlling the woody plants that grow on our right-of-ways has shown a great deal of promise. We cannot, however, expect 100 per cent kill. We want to emphasize the importance that the men who apply this chemical play, as in addition to getting complete coverage, they must use a lot of plain common sense, check the wind drift, and avoid spraying near susceptible plants, such as tomatoes, tobacco, grapes, alfalfa, beans, peas, and other legumes.

If you do a good job of keeping your customers informed on what you are doing and do a good job of carrying out your program, we are sure you will be successful.

The End.

V V

Cousins, Watt, White Elected To Various Bell System Posts

Erskine N. White has been elected vice-president and general manager of the New England Telephone & Telegraph Co., Boston, Mass. He succeeds Sanford B. Cousins, who becomes vice-president and general manager of the Bell Telephone Laboratories, Inc., New York.

Charles S. Watt, assistant treasurer of the American Telephone & Telegraph Co., was elected a vice-president of the above New England company, succeeding to the revenue and other fiscal duties which have been in charge of Mr. White. Mr. Watt, a native of Chicago, joins the New England company after some 28 years' service in the Bell System as a price and cost engineer.

MAINTENANCE TESTING EQUIPMENT

By JOHN A. BRACKEN

PART XXXII. The preceding article in this series appeared in the July 8 issue, p. 23.

A SIMPLE means of determining the resistance of telephone circuits by the current flow method is to use a rheostat, calibrated to known values and connected in series with a milliameter and battery, as shown in *Fig. 1.*

First, the current flow is read on the milliameter scale, and then the "RHE" and "SW" keys are operated as shown in *Fig. 2.* The rheostat arms are adjusted until the same reading is again indicated on the milliameter. The amount of the resistance observed on the rheostat, less the test equipment local circuit resistance, will equal the external circuit resistance.

Example: Suppose the meter indicates 8 MA when connected to the line shown in *Fig. 1,* and when connected as in *Fig. 2,* an 8 MA reading is again obtained on the meter by adjusting the rheostat to 600 ohms.

Assuming the local circuit resistance to be, say, five ohms, then 600—5=595 ohms in the line circuit, or by Ohm's law: R=E÷I—R1, where R1 is the local circuit resistance. It will be seen that this set-up differs somewhat from the usual arrangement of an ammeter, in that there is an addition in resistance of five ohms included in the circuit tested, instead of only the meter negligible resistance. The greater the length, the higher the resistance of a pair of line conductors.

For example: Since the resistance of a copper wire, one circular mil in cross-section, and one foot long, is about 10.7 ohms, it follows that 100 ft. of this wire should have a resistance of 10.7×100=1070 ohms. The cross-section of a wire means its area, which of course is quite different from its diameter. The diameter of a wire is stated in mils, but its area is stated in circular mils.

The greater the cross-section, the lower the resistance. For instance, if two line conductors are made of the same material except that one has 10 times as large a cross-section as the other, then the one having the greater cross-section, would have only one-tenth as much resistance as the other.

A point relative to the resistance of a line conductor is that its shape does not affect its resistance, provided it is not stretched or bent in such a way as to change its length or cross-section.

To find the cross-section of a wire in circular mils, first the diameter of the wire is taken and then this number is squared (multiplied by itself). For example: A No. 14 NBS gauge hard drawn copper wire having a diameter of 80 mils has a cross section of 80×80=6,400 circular mils. Having the cross-section in circular mils, the square root of this number will give the diameter. Thus $\sqrt{6400}=80$. Hence, the diameter is 80 mils or 0.080 inch. The resistance per loop mile at 68° F, is equal to $R=K\frac{2l}{d^2}$, in which "K" is the resistance

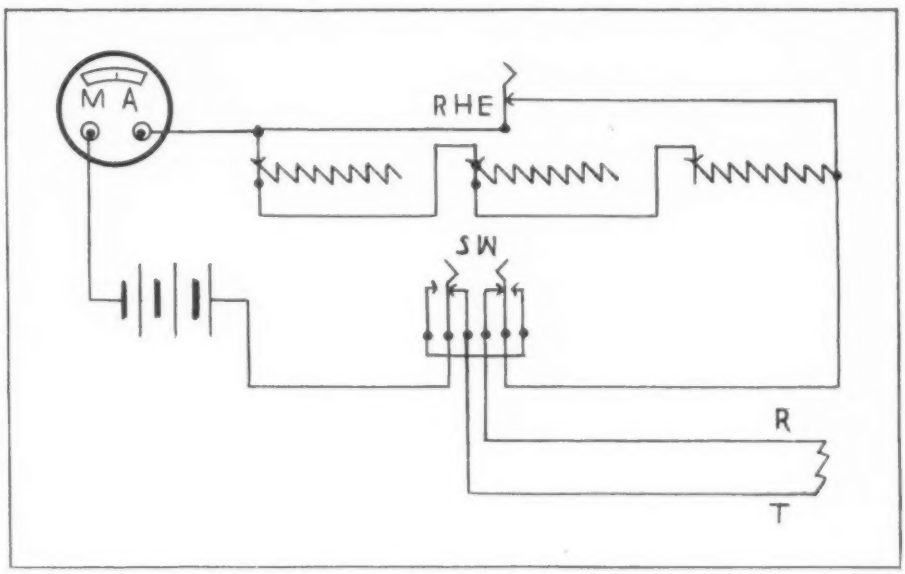


Fig. 1

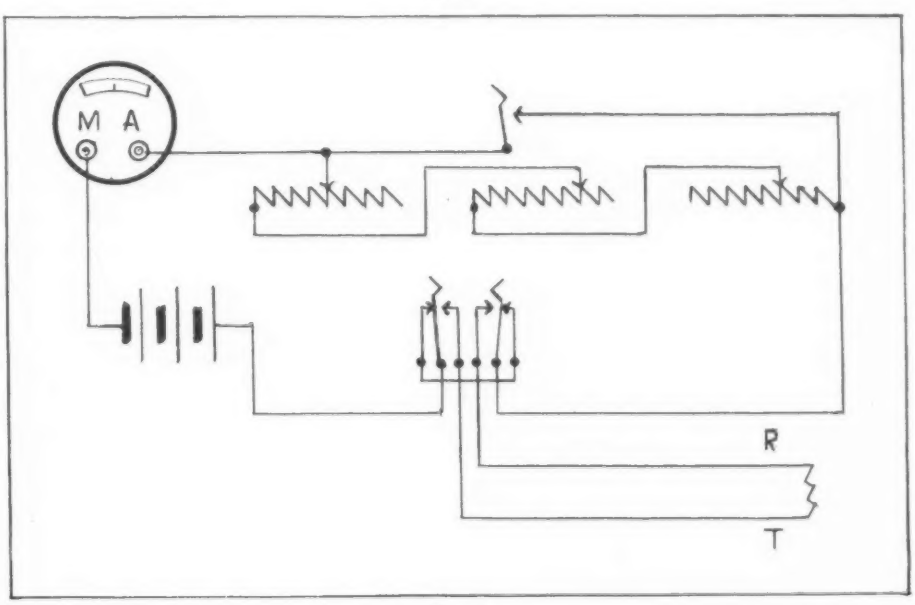


Fig. 2

of a foot of wire 0.001 inch in diameter and called one mil-foot. The value of "K" is constant for the same size wire but different for each kind of metal the wire is made of.

For copper it is about 10.7, "l" is the length in feet, and "d^2" being the cross sectional area in circular mils. Accordingly, $R = K\frac{2l}{d^2}$, or $2 \times 5280 \div 6400 = 1.65 \times 10.7 = 17.7$ ohms. Again $R = l\frac{K^2}{d^2}$, or $10.7 \times 2 = 21.4 \div 6400 = .00334 \times 5280 = 17.7$ ohms.

Fig. 3, shows a pair of No. 14 NBS copper conductors having a short circuit assumed to be zero resistance. Then the approximate distance "D" from the testing point is equal to "R" (the resistance as measured by means of the milliameter and rheostat as in *Figs. 1* and *2*) divided by "L" (the loop resistance of the pair per mile.)

Suppose the measurement obtained is 12.3 ohms, then, D=R÷L or 12.3 ÷17.7=0.695 miles or 3,670 ft. Again, the measurement resistance value divided by the resistance per foot (0.001676 ohms for No. 14 NBS copper wire) will give the approximate distance to the fault, or, 12.3÷.001676= 7,338÷2=3,669 ft. Also multiplying the measured resistance by the feet per ohm (596.6 ft. for No. 14 NBS) will give the approximate distance, or 596.6 ×12.3=7,338÷2=3,669 ft.

If the short circuit shown in *Fig. 3* should possess resistance, then the value of "R" would be equal to the loop resistance of the pair to the fault plus the resistance of the fault itself, consequently the fault may be at any point between the exchange and apparent distance.

When it is not definitely known that the fault has zero resistance, which usually is the case, a simple way to find out is to first make a measurement with the distant end of the line conductors open, and another with the conductors short circuited at the distant end. If the two measurements are the same, that is, with the distant end open and then shorted, and it does not affect the value of the measurements, the fault has practically zero resistance. However, if the measurement with the distant end shorted is less than the one with the distant end open, the fault itself has resistance.

Locating a fault in the pair of conductors more accurately may be accomplished by making loop measurements from each end. However, in practice it is not always convenient to do this, therefore, as a substitute, which is equivalent to the same thing, connect the distant end of the bad conductors

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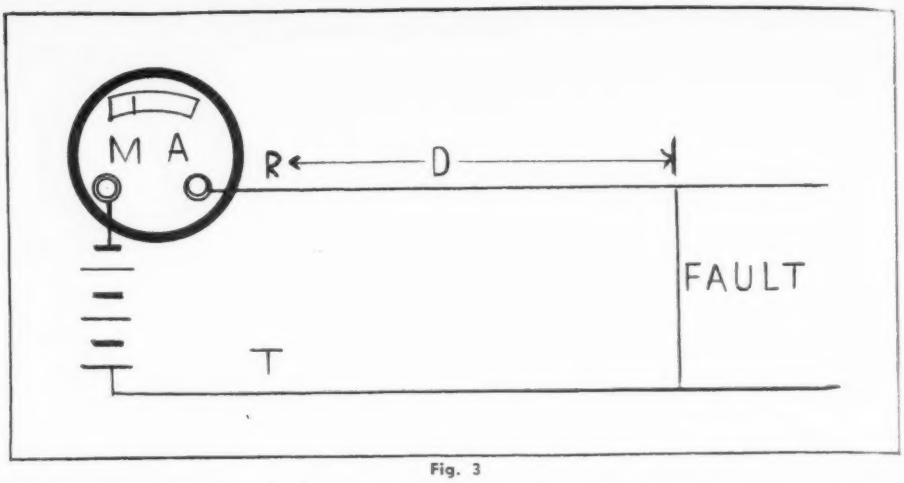

Fig. 3

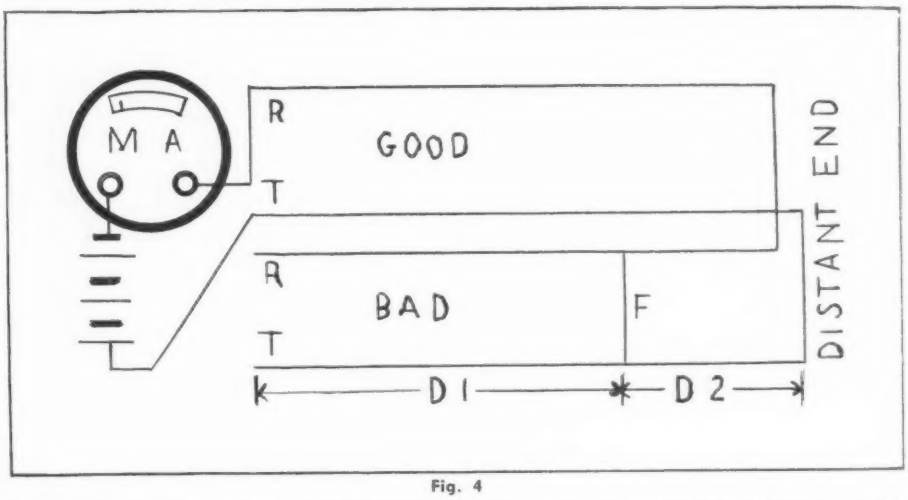

Fig. 4

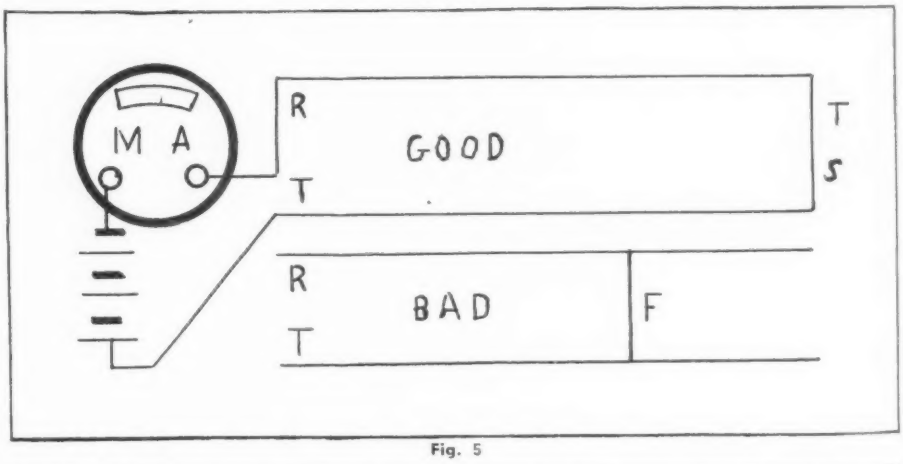

Fig. 5

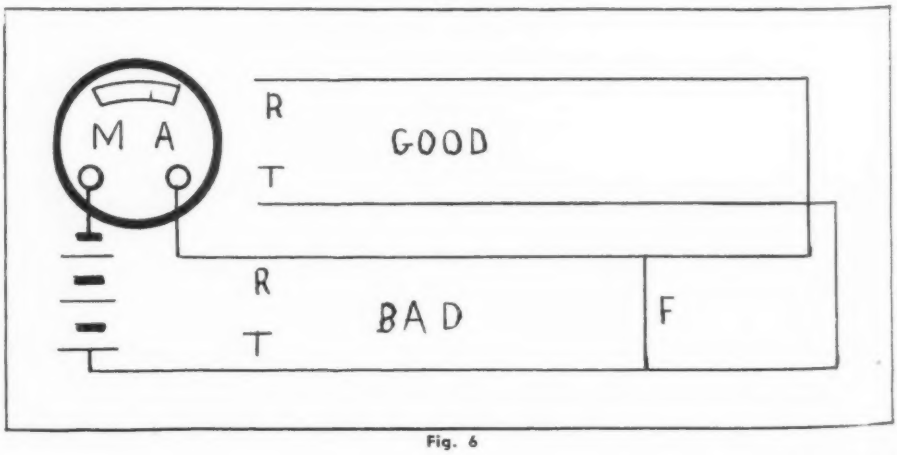

Fig. 6

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THE OPERATOR'S Corner

BY
MAYME WORKMAN
TRAFFIC
EDITOR

COMMUNICATION is our business and to us it is a simple procedure to send the human voice afar. In every age of history we find man trying to communicate with others by sending sound over distance. To accomplish this, he has relied upon a variety of devices, such as drums, horns, bells and speaking tubes. Most were crude and primitive.

Pictures of horns appear on stone slabs of the time of Sennacherib and later Assyrian kings. Whether these were musical instruments or speaking trumpets is not known, but it is pretty definitely established that Alexander the Great later achieved notable results in communication by enlarging the speaking trumpet to a giant megaphone. It would send the human voice 12 miles, according to one writer. How well it could be heard at that distance is not clearly stated, however.

The trumpet may date to Assyrian times. It probably developed from the shofar or ram's horn, which may have originated in the conch shell. At any rate, two silver trumpets were said to have been made by Moses at divine direction. Their signals regulated the migration out of Egypt. Trumpets still send afar military commands and notifications, but on the whole they now are more useful for entertainment than signalling.

Ashanti drummers are masters of "drum talk," which has been passed down from generation to generation. Pounding a high and low pitched drum in proper alternation they are able to send and receive sentences in their own dialect. Although a message that introduces wholly unexpected subject matter is often misunderstood, drum talk probably comes closer to telephone conversation than any other primitive method of communication sound.

The Romans built a stone wall in England, from Solway to Tyne, 100 miles. Severus, the historian, said that watchtowers were placed at intervals of a mile or so, and that these were connected by lines of brass pipe which were used effectively as speaking tubes. Speaking tubes still are used aboard ships and river boats, and at one time were to be found built into every well-equipped dwelling. They carry the voice well, but cannot be interconnected easily.

The rattle has a history, too, in communication. Man's one-toned sound devices are used mostly for warnings or calls to assembly, but their uses change. For instance, one 18th century writer speaks of "the creaker that convoked the Christians before the invention of bells." Which means that people long ago were summoned to church by the same kind of vibrator that later generations knew as a watchman's rattle and that now is heard on New Year's Eve in raucous companionship with the tin horn.

In Malay countries, talking gongs can be found. The sender taps out a call to attention, using a progression of tones from a carillion of gongs. Then he strokes a deep-toned talking gong with a padded stick in his right hand, and while moving his left hand about the knob, he modulates the sound to simulate speech.

The Serbian shepherd boys sent sound waves through the soil by pushing a knife blade into the ground. They were interested in establishing listening posts rather then sending signals, according to Michael Pupin, the Serb who became an American inventor. By putting an ear to the hilt, the lads could follow the movement of flocks and detect the approach of marauders. But they also sent and received simple messages — using the only means at hand of being heard afar with some privacy.

As you probably know, the word "telephone" means "far sound." A marine alarm and signal trumpet used in the year 1844 was called a telephone—one of the earliest applications of the word, because it sent sound afar. It was a hand-powered siren which enabled sailing craft to send the kind of signals that later were blasted out from ship and locomotive whistles. Steam and electric sirens today are used effectively for fire and other general alarms.

Whistling in Spanish is a form of communication in Gomera, one of the Canary Islands. People three and four miles apart converse in this manner. As they grow up, Gomeran men and women, learn to whistle—with or without fingers in the mouth as they please. They become so expert that they can pronounce Spanish while whistling. They often have demonstrated their ability to talk at a distance, but whistled language, like drum talk, deals best with familiar subject matter.

Alexander Graham Bell's search for a way to transmit the spoken word electrically was a part of the age-long quest to send the human voice afar. The historic moment in 1875, when he heard the overtones of a twanging spring coming faintly over a wire, marked one more step in that progress. It was a long step, for that "twang" confirmed Bell's belief that he could transmit a varying current of electricity. It gave the human voice electric wings.

Looking ahead, the prospects are bright for further progress in the art of communication. More and better things have and are being developed to make telephone service more valuable, more useful and more satisfactory in every way.

Traffic Questions

(1) Why is it important to follow-up attempts on long distance calls not immediately completed?
(2) Would you recommend that a chief operator visit her tributary exchanges and vice versa?
(3) What are the most commonly used switchboard markings?
(4) In adjusting an operator's headset, how far should the mouthpiece be from the operator's lips?
(5) In checking your equipment to determine its condition, what should be observed?

Answers are presented on page 40.

V V

Announce Conference Date

The next meeting of the United States Independent Telephone Association's Executives' Conference will be held May 14 and 15, 1951, at the Greenbrier Hotel in White Sulphur Springs, W. Va., according to a recent announcement by Clyde S. Bailey, executive vice-president.

Courts and Commissions

Circulate Petitions Against North Dakota Cooperatives

Petitions for two initiated measures, aimed at cooperatives, have been placed in circulation in North Dakota, with 10,000 signers required by Aug. 7 to put the proposals on the November general election ballot.

One of the proposed measures would make subject to the 6 per cent state income tax the earnings of cooperatives which are not distributed in cash to patrons.

During the 1947 session of the state legislature, the same measure passed the State Senate but was defeated in the House. The North Dakota Farmers Union led the fight against it in the legislature and then went into politics actively in the 1948 campaign partly because of the near-passage of the tax bill.

The other proposed initiated measure would prohibit cooperatives from checking off membership dues or other fees from the dividends they pay patrons, unless the patron signs an authorization for such deductions. The authorization would have to be renewed annually.

The measure to apply income taxes to cooperatives is part of the program of the North Dakota Tax Equality Committee, but that group was not handling the petitions.

Distribution of the petitions was being made by the Fair Tax Practice Committee.

V V

Reports Progress in Meeting Demands for Better Service

The North Carolina Utilities Commission on June 21 reported to Gov. W. Kerr Scott, who has been highly critical of the state's telephone companies, that the companies are trying to meet his demands for more and better service, but have been hampered by difficulties in obtaining materials and equipment and raising additional capital. It said the problem of getting capital is particularly true with smaller firms.

During the first six months of 1950, a total of 79,088 telephones were installed and 51,583 removed, bringing the total number of instruments in use on June 30 to 526,749, representing an average of one for every eight citizens of the state, the commission pointed out.

However, the report stated that despite gains made, the companies still have 53,538 unfilled requests for service and "although this figure represents requests on file, interest among the population who do not have registered formal requests indicates the desire for telephone service to be several times this amount."

Of the net gain of 27,595 telephones, 13,045, the commission said, were installed inside the companies' "base rate areas—generally within cities and towns and the outlying suburbs. A net gain of 9,796 telephones was reported in the rural areas, and a total of 4,664 extension telephones were installed during the six-month period both in urban and rural areas."

Governor Scott, after receiving the report, acknowledged that "they seem to be getting along," saying that "they (the companies) think they may do better in the next six months if the war doesn't cause shortages."

V V

United Telephone Co. Granted Increase to Offset Pay Raises

An annual rate increase of $355,000 for the United Telephone Co., Warsaw, was authorized recently by the Indiana Public Service Commission.

The new charges will go into effect Aug. 1, according to the order, which explained that the increase was granted to offset payroll increases growing out of the new Federal Fair Labor Standards Act.

V V

Named Senior Investigator

John T. Armstrong, former supervisor of inspectors for the North Carolina Utilities Commission, has been transferred to the telephone division as senior investigator.

Van Wert, Ohio, Company Granted Rate Increase

The Van Wert Telephone Co. was granted rate increases on July 26 by the Ohio Public Utilities Commission which will add $35,437 to its annual revenue.

The city of Van Wert and its Chamber of Commerce, which protested the increases, said at a hearing recently they would not object to the rate boosts provided the service is improved.

The commission found that service in the past "has not been good," but said testimony at the hearing showed the service would "be greatly improved" in the near future by the company's construction program.

The commission ordered the company to report back on the progress of the construction program within 60 days and every 90 days thereafter until a further order is issued.

Monthly rates for a single party business line will be increased from $4.25 to $6.75 and for two-party business from $3.75 to $6.00.

The single-party residential increase is from $2.50 to $3.50 and the four and five-party residential boost from $1.75 to $2.50.

V V

Obtain Incorporation Papers

Yadkin Valley Telephone Membership Corp., Yadkinville, has obtained a certificate of incorporation from the North Carolina secretary of state to provide telephone service. It is a nonstock firm with the incorporators including Homer Myers, Jr., and James Parks, both of Union Grove, and Fred Brandom of Yadkinville, and others.

V V

Incorporated in Illinois

A charter has been issued to the Woodhull (Ill.) Community Telephone Co. by the Illinois Secretary of State. Incorporators are Louis P. Kness, Ivan Granberg, Lawrence E. Nelson and Homer Horner.

Three Nebraska Companies Apply for Rate Revisions

The Cozad Mutual Telephone Co. has applied to the Nebraska Railway Commission for authority to establish rates of $2.75 a month for residence and $3.75 for business service on a rural line that it acquired in 1946.

Manager Mark Young states that he agreed to take over the line and furnish service against his financial judgment and to bill the subscribers for maintenance labor. He said he has consistently operated at a loss from which he asks to be relieved by the establishment of what he regards as a proper rate schedule. Last year he estimated his loss at $590.

Permission has been given by the commission to the North Fork Independent Telephone Co., Amelia, to put into effect toll charges on its line to Atkinson, where connection is made with the Northwestern Bell Telephone Co. exchange. For station to station calls the rate is 25 cents for the first three minutes and 5 cents for each additional minute, while on person to person calls the charge will be 40 cents for the first three minutes, 10 cents for the next three minutes and 5 cents for each additional minute. These are the same as the Northwestern charges for the same distance.

The Newport Telephone Co. has applied to the commission for authority to increase rates on all classes of service. The hearing has been scheduled for Aug. 11. The company, individually owned, is a small Class F corporation, serving 150 stations, half of them switched.

V V

Reopen Hearings on Oklahoma Company's Rate Application

Hearings on the rate application of the Kellyville Telephone Co. were resumed by the Oklahoma Corporation Commission on July 26.

The case was consolidated with residents' application for improved service. About a dozen residents testified that service was very poor during wet weather and after 9 p.m. The company brought out in cross examination from some of these witnesses that service has improved within the past few months.

Further hearings were postponed until September to give time for the company to comply with an attorney's request for the presentation of records to accompany exhibits regarding the expense of moving some of its lines.

The hearings are being conducted before Paul R. Reed, the referee.

COMING CONVENTIONS

Maine Telephone Association, Belgrade Lakes Hotel, Belgrade, Sept. 6 and 7.

Michigan Independent Telephone Association, Olds Hotel, Lansing, Sept. 14 and 15.

Rocky Mountain Telephone Association, Newhouse Hotel, Salt Lake City, Sept. 21 and 22.

Tennessee Independent Telephone Association, New Southern Hotel, Jackson, Sept. 27.

United States Independent Telephone Association, Stevens Hotel, Chicago, Oct. 9, 10, and 11.

North Carolina Independent Telephone Association, Carolina Inn, Pinehurst, Oct. 16 and 17.

South Dakota Telephone Association, Cataract Hotel, Sioux Falls, Oct. 26 and 27.

Virginia Independent Telephone Association, Natural Bridge Hotel, Natural Bridge, Nov. 2 and 3.

South Carolina Independent Telephone Association, Wade Hampton Hotel, Columbia, Nov. 6 and 7.

Georgia Telephone Association, Dempsey Hotel, Macon, Nov. 9 and 10.

Florida Telephone Association, Sheraton Plaza Hotel, Daytona Beach, Nov 13 and 14.

Alabama Independent Telephone Association, Jefferson-Davis Hotel, Montgomery, Nov. 16 and 17.

Missouri Telephone Association, Muehlebach Hotel, Kansas City, Nov. 20 and 21.

Southern Bell Rate Case Reopens in North Carolina

Southern Bell Telephone Co. representatives told the North Carolina Utilities Commission July 24 that it needs rate increases totaling $2,700,000 a year to carry on its expansion program, stating that it has spent $53,500,000 to more than double its plant investment in the state since 1945 and during the same period increased from 160,000 to 300,000 the number of its installations in the state (TELEPHONY, June 10, p. 29).

H. G. Booth, North Carolina manager, said "the public demand for more and more service in North Carolina continues to be very heavy" and to meet the demand "we need to continue our construction activities at the rate of some $12,000,000 to $13,000,000 per year for each of the next several years." The rate increases, he said, are necessary in order to raise the capital necessary to carry out the program.

The company left the decision on the amount of any possible rate changes to the commission. It estimated that if the full amount of the request is granted subscribers' bills will be increased 12 per cent. Long distance rates would not be affected.

After hearing representatives of the company, the commission recessed the hearing until an undetermined later date at which time those protesting the rate increase will be heard. The next hearing is expected to be held in about 60 days.

Company spokesmen said that the increase requested will net only about $1,500,000 after the deduction of taxes. If the full amount of the request should be granted it would enable the company to realize a return of 7.25 per cent on its net investment and would attract funds from investors, the commission was told.

V V

Zenith Authorized to Start Testing Phonevision System

The Federal Communications Commission has granted permission to Zenith Radio Corp. to begin its 90-day test period for its "Phonevision" system on Oct. 1.

After much negotiating with the government agency, Zenith can now go ahead with testing its "subscription television" system. The tests are to take place in and around Chicago.

"Phonevision" is a method of sending special television programs—such as movies—over a telephone wire to subscribers' sets. A decoder device in the set "unscrambles" a special signal and the program can be seen on the subscribers' television sets but not on ordinary sets.

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Paper Insulated Telephone Cables

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General Cable aerial and underground cable is available with single wrapped insulation, in the following sizes:

No. 24 A.W.G. — 11 to 1515 pairs
No. 22 A.W.G. — 11 to 909 pairs
No. 19 A.W.G. — 6 to 455 pairs

General Cable conductors are drawn from the best grade copper wire bars. Dry paper insulation is the finest quality obtainable. Sheathing is extruded from a uniform lead antimony alloy which assures extreme ductility and strength.

Whatever your requirements, there is no risk of compromising quality when you specify General Cable.

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Hears Rate Application of South Carolina Company

The South Carolina Public Service Commission held a hearing July 27 on the petition of the Seacoast Telephone Co., Georgetown, which is seeking to obtain authority to increase its rates and charges for telephone service at Andrews, Georgetown and Myrtle Beach.

Also included in the petition is a request to discontinue free service between Andrews and Georgetown.

V V

Nebraska Company Gets Rate Boost at Six Exchanges

The Nebraska Railway Commission July 26 granted a rate increase to the Union Telephone Co., Blair, for its exchanges in Bloomfield, Crofton, Wausa, Verdigre, Winnetoon and Center, effective Oct. 1 (TELEPHONY, June 17, p. 27).

The increases will range from 15 cents to $2.00, depending on type of service.

V V

Ohio Independent Receives Increase Despite Protests

The Ohio Utilities Commission recently granted the Ohio Central Telephone Co., Wooster, an immediate rate increase for 39 of its exchanges, despite protests from the cities of Wooster, Rittman, Shreve and Big Prairie.

The increases, which will add some $50,000 a year to the company's annual revenue, were given on the ground that present rates do not yield the company an adequate rate of return on the value of its property.

V V

Virginia Man Sues C&P For Alleged Wrong Listing

A Falls Church, Va., dry cleaner July 25 sued the Chesapeake & Potomac Telephone Co. for $40,000, alleging refusal to list him the way he wants to be listed.

Thomas A. Woods, the plaintiff, said in suit that he is known in the community as "Dry Cleaner Woods," and wants to be so listed in the classified directory. The company will not list him that way, he declared.

V V

Higher Rate Schedule Granted To Oklahoma Independent

Upon application of Robert C. Lewis, owner, the Terral Telephone Co., has been granted the following increased rate schedule, effective Sept. 1:

Classification of Service	*Monthly Rate*
One-party, business	$3.25
Two-party, business	3.00
Rural business, multi-party	3.00
Rural business, special	3.00
One-party, residence	2.00
Two-party, residence	1.75
Four-party, residence	1.50
Rural residence, multi-party	2.00
Rural residence, eight-party, metallic	2.25
Rural residence, special	2.75
Handset differential, desk type	.25

V V

Georgia Company Sold; To Convert to Dial

Sale of the Camp Hill (Ga.) Telephone Co. to J. C. Horton, Columbus, Ga., has been approved by the Alabama Public Service Commission.

A new dial telephone system will be installed in Camp Hill within the next several months after change in ownership, company officials have announced.

The company was sold by Mrs. Bessie G. Rodgers, Camp Hill.

V V

Summary of Commission Rulings and Hearings

Illinois Commerce Commission

July 31: Hearing on application of Tampico Farmers Mutual Telephone Co. for authority to increase rates.

Kansas Corporation Commission

Sept. 1: Hearing on application of Fontana Telephone Co. and Elk Falls Telephone Exchange for authority to change rates.

Sept. 15: Hearings on applications of F&M Telephone Co., Ulysses, and of Richmond Home Telephone Co., for authority to change rates.

Missouri Public Service Commission

July 27: Hearing regarding exchange area boundary line of Stark City Telephone Co. and Stella Telephone Co.

Oklahoma Corporation Commission

Sept. 7: Continued hearing on application of certain residents of Noble, Okla., for rural service from the Southwestern Associated Telephone Co., Dallas, Tex.

Sept. 12: Continued hearing on complaint against the service of the Ardmore-Graham Telephone Co.

Sept. 15: Hearing on application of Choctaw Telephone Co., for increased rates at Soper, Okla.

Wisconsin Public Service Commission

July 31: Hearing on application of Commonwealth Telephone Co., Madison, for authority to merge with Midwest States Telephone Co. of Wis., Inc.

Aug. 1: Hearing on complaint of M. A. Jacobsen *et al* against Wisconsin Telephone Co.

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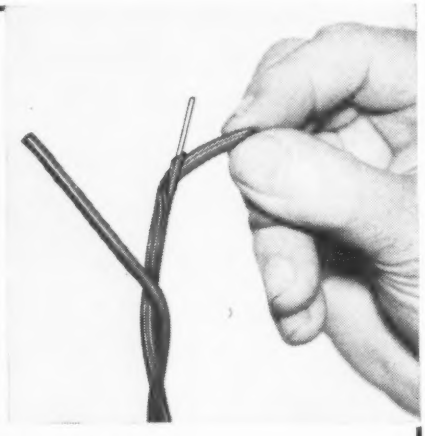
No drop wire is better than its insulation, and in insulation Paragon offers the finest. Both Paraprene or Weather Proof Braid show their superiority by mere eye examination and long years of usage confirms this.



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Interior Wire
Bridle Wire
Duct Wire
Ground Wire
Jumper Wire

June Fire Destruction Greatest In 21 Years, Board Says

Fire destruction in the United States during June is estimated at $57,116,000, an increase of 10.3 per cent over losses during the same month a year ago, it was announced recently by W. E. Mallalieu, general manager of the National Board of Fire Underwriters. This was the greatest fire loss recorded for the month of June during the past 21 years.

This was the fifth month this year during which fire losses were higher than for the same month of 1949. However, the June, 1950, total represented a decrease of 2.8 per cent from the losses of $58,765,000, reported in May, 1950.

Losses for the first six months of 1950 reached $367,177,000, an increase of $18,310,000, or 5.2 per cent, over the fire destruction during the same period of 1949.

For the 12 month period ending June 30, 1950, losses totalled an estimated $685,846,000. This is an increase of 1.8 per cent over losses of $673,441,000, recorded for the 12 months ending June 30, 1949.

These reported losses under fire insurance policies include an allowance for uninsured and unreported losses.

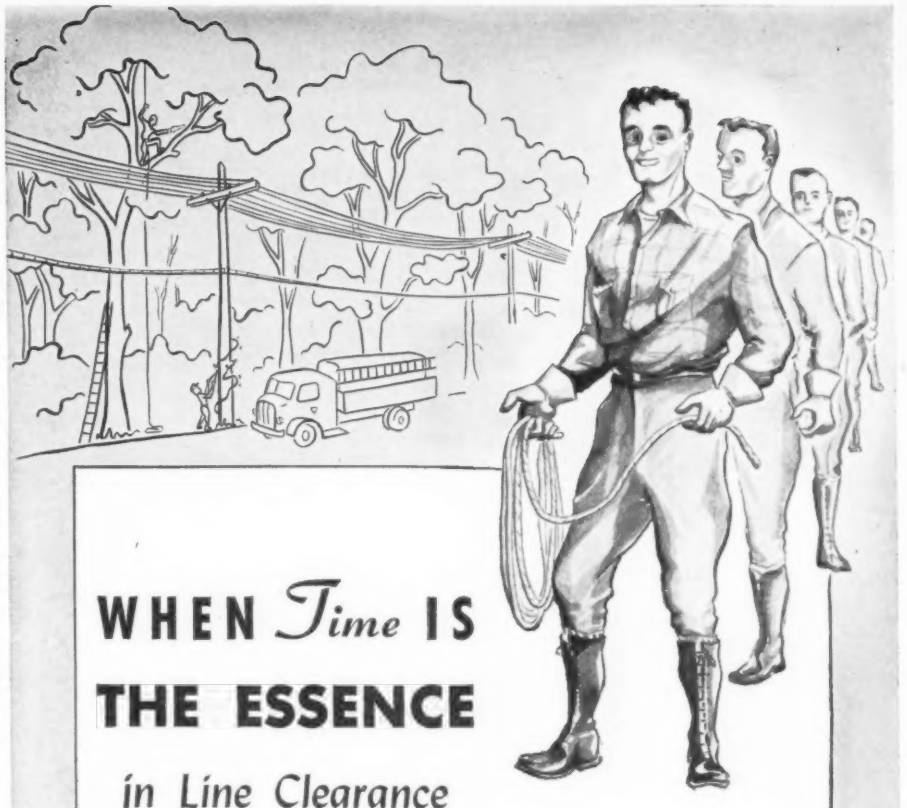
An average of 30 Americans die in fires every 24 hours, a large percentage of them in home fires, also warns the National Board of Fire Underwriters, which has just issued a new booklet "to help Americans keep this ever-present threat of fire from their homes."

The organization predicted that fires would break out in about 1,100 American homes during a 24-hour period, and emphasized that most of the fires could be prevented by following a few simple precautions.

The new 16-page, illustrated booklet entitled "The Fire Safe Home" takes home owners on a tour of the house in search of common fire hazards. It points out the conditions most likely to cause a blaze in each part of the house, and offers specific advice on means of eliminating these hazards.

Topping the list of fire causes in the United States is careless handling of cigarettes and matches, the booklet says, with one out of every three fires traced to this cause.

The booklet also takes up such potential fire hazards as the television set, and explains how careful attention to safety features by manufacturers and pre-testing of sets by Underwriters' Laboratories, Inc., have helped eliminate most of the fire and shock hazards connected with television.



WHEN *Time* IS THE ESSENCE

in Line Clearance

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THE PLANT MAN'S *note book*

BY RAY BLAIN TECHNICAL EDITOR

FOR YEARS, numerous telephone and power companies have been marking dangerous poles—until such time as they can be repaired or replaced—by painting a red cross on them. This method is not considered satisfactory, especially on a treated pole, in view of the fact that the paint may become dull and result in the danger signal not being easily seen. Many serious accidents have been caused by linemen climbing these unsafe poles.

James T. Orton, 231 W. Lockwood Ave., Webster Groves 19, Mo., decided, in the interest of safety, to do something to correct this dangerous practice. He has designed and fabricated a "Safety Emblem" of bright red plastic in the form of a railroad "stop-look-listen" warning. When tacked to a defective pole, this bright red, durable and non-fading danger signal will definitely prevent accidents.

A number of persons share the opinion that this emblem can easily become the nationally recognized symbol or "railroad crossing danger signal" for hazardous plant conditions on both power and telephone systems.

Mr. Orton sells these emblems in lots of 100 or more at 3½ cents each, which just about equals the actual cost.

• • •

It has been said: "There is a difference between 10 years of experience and repeating one year's experience 10 times."

• • •

For every minute in 1949, the Bell System

added 3.9 telephones;
handled 91,700 telephone conversations;
paid $3,843 in wages and salaries;
received $1,116 from old and new investors;
spent $2,055 for new construction;
and paid out $659 in taxes.

We are of the opinion that the use of a jointed pole to support an exploring coil so that it is not necessary to climb poles or ride messenger to locate trouble in aerial cables is an excellent idea.

Such an arrangement is made possible by the use of an amplifier which is carried by the pole wielder, permitting accurate detection of the tone, a thing that is always necessary for the definite location of trouble.

These refinements may be the inventions of lazy men, but they do pay dividends in labor savings and the speedy location of troubles.

• • •

We published an item on this page in the issue of June 24, 1950 which had to do with a splicer and his helper who completed a wild splice in a 1,200-pair cable in a total of 24 hours' work. We asked: "Can any of our cable splicer readers beat this record?" We are now in receipt of the following interesting letter from Ben Trackwell, cable splicer's helper, of Richmond, Ind.:

"I would like to cite the record of the splicer I am helping. Working together, we can duplicate this 24-hour job for 1,200-pair cable you mentioned in 10 hours. This will include opening the cable, checking for crosses, shorts and grounds, boiling out with paraffin, wiping the joint and flash-testing for leaks.

"I would like also to give you our time on a 900-pair cable, which averages seven and one-half hours per splice. We have been doing this type of work day after day for the past six months on new construction for the Richmond (Ind.) Home Telephone Co.

"The splicer's name is Paul H. Small, and he is 24 years old with only four years' experience as a cable splicer. I am his helper with only six months' experience. We work side by side in the manhole. I slip sleeves and strip insulation from one end. The splicer strips insulation from the other end and twists the conductors.

"There is also another splicer, Orville Gordon, and his helper, William Brown, who can duplicate our time making splices I have mentioned. The four of us all work for the Neale Construction Co. of Topeka, Kan., presently doing work for the Richmond Home Telephone Co. For verification of our time and quality of work, we invite anyone who is interested to come watch as there are two months' more work to be completed. Or, contact V. D. Van Nuys, plant superintendent of the Richmond (Ind.) Home Telephone Co."

This is certainly an interesting letter which describes an even more interesting record. Until we hear of a better record, we shall consider these splicers the champions!

• • •

Someone has said that success is getting what you want. Happiness is wanting what you get.

• • •

We are in receipt of some interesting information from W. B. Garvey of the Illinois Bell Telephone Co., on the use by that company of a reliable voltage indicating device which makes use of a small neon light.

When a small gas engine driven direct current generator was used to provide manhole lighting it was noted that lamps burned out frequently because of excessive engine speed. The neon lamp was arranged to light when the voltage rises from 115 to 116. This arrangement may also be modified to use another lamp to indicate when voltage drops one volt to 114.

It would appear that this device could be used to advantage on various special applications of voltage control in the communications field.

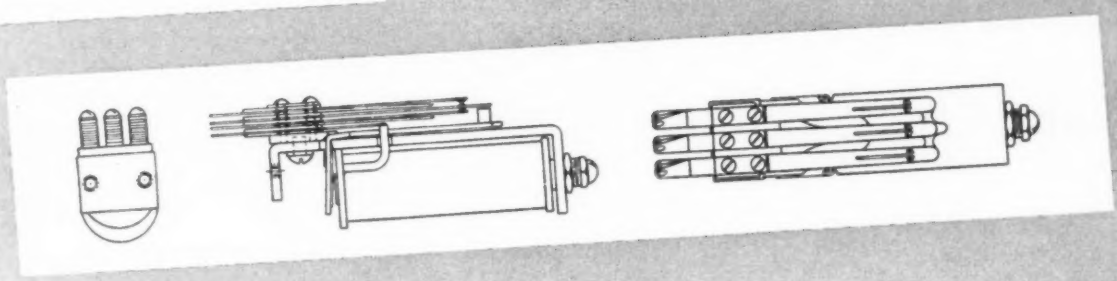
• • •

Col. Victor A. Conrad has been appointed Chief of Army Communications Service Division, Office of the Chief Signal Officer.

Brig. Gen. W. T. Guest is now Chief of Signal Plans & Operations Division, Office of the Chief Signal Officer.

EVERY LITTLE MOTION HAS A COST ALL ITS OWN

● Motion in your mechanical equipment is one of the most costly items in exchange overhead. Motion, in addition to actuating mechanisms, releases destructive forces that constantly attack these mechanisms—hence, costly maintenance to keep the system operative. The more intricate the dial switching equipment, the greater the maintenance cost.



There's a simple solution to this cost problem—North ALL-RELAY Dial Automatic Switchboards. The simple functional, efficient dial automatic system, North ALL-RELAY requires only the relay contact to perform its function. No perceptible wear—no need for adjustment and no cleaning—virtually self-maintained—just a few reasons North ALL-RELAY enjoys the unparalleled esteem of operating men throughout the country.

But don't take our word for it—examine ALL-RELAY at work in an installation in your vicinity—then decide. The location of a North ALL-RELAY installation in your neighborhood can be had by simply writing or calling—

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THE NORTH ELECTRIC MANUFACTURING CO., Galion, Ohio, U. S. A.

Originators of **ALL RELAY** *Systems of Automatic Switching*

PLANT MAN'S QUIZ

Q. What is the meaning of the term "dancing wires" on a toll line?

A. When heavy ice-covered wires are exposed to a strong wind they sometimes jump or dance with an entire span length oscillating up and down as a unit. The wires of the lead may or may not dance in unison. When the dancing is violent, it may become irregular. A given point in a jumping wire describes an elliptical path with the long axis inclined to the vertical. In a span 130 to 150 ft., a wire sometimes moves through vertical distances of as much as four to six feet.

The basic cause of wire dancing is unknown. The detrimental effects of this action cause wire to contact and wrap together in the center of the span. It may also cause ties to loosen at the insulators and create fatigue breaks of both the line wire and ties. The stresses caused to wire by this action may also result in serious sag irregularities.

• • •

Q. What is the new extra-high strength wire which we understand is available for rural line use?

A. It is believed that you refer to the recently developed "E" type steel line wire. This type of wire has been developed primarily for use in the construction of rural lines where conditions favor the use of maximum average span lengths in excess of 350 ft., but not in excess of 600 ft., in heavy loading areas.

In medium and light loading areas, the standard high tensile strength wire will ordinarily be used on lines when the span length averages 600 ft. or less.

This new wire has a minimum breaking strength in pounds of 1,800.

• • •

Q. Is there any advantage to be gained by the use of the outdoor type of station protectors on rural lines?

A. Perhaps the principal advantage to be gained from the use of this type of protector is that it is accessible to the trouble shooter at all times even though the customer may not be at home at the time of his visit. In such cases, the trouble may be cleared as often on rural lines it may be traced to ground in the protector blocks after severe lightning storms.

• • •

Q. Will it prove satisfactory to use the same size of cotton sleeving in the splicing of both 19 and 22 gauge cable?

A. In general, a 5/32-inch diameter cotton sleeve is used to make a straight butt of bridged splice in 22-gauge cable. A 5/32-inch sleeve is suitable for making a straight butt splice in 19-gauge cable, but a ¼-inch sleeve is required for a bridge splice. When a conductor splice is soldered, double wall cotton sleeves should be used.

• • •

Q. What type of solder is generally used for cable splicing?

A. Half-and-half, which is 50 per cent tin and 50 per cent lead, is usually employed for soldering seams in split sleeves. Wiping solder may be either 40 per cent tin and 60 per cent lead or 38 per cent tin and 62 per cent lead.

Another type of solder occasionally used consists of 37.25 per cent tin, 0.10 per cent arsenic, and the remainder lead.

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Maintenance Testing Equipment

(Concluded from page 22)

to a pair of good conductors as shown in *Fig. 4*. This will permit testing in both directions from the same test point.

Example: Assume the defective conductors have a resistance (R) of 17.7 ohms per loop mile. The good pair when temporarily short circuited (TS) at the distant end, as shown in *Fig. 5*, has a loop resistance (R1) of 11.5 ohms. The measurement to the fault over the good pair as shown in Fig. 4 is (R2) 21.4 ohms, and the measurement on the bad pair, as shown in *Fig. 6*, is (R3) 7.2 ohms. What is the distance to the fault? What is the resistance of the fault?

Assuming that the fault has zero resistance, then the apparent distance from the exchange to the fault is by formula: D1 = R3 ÷ R or 7.2 ÷ 17.7 = 0.407 miles. The length (ℓ) of the good pair is ℓ = R1 ÷ R or 11.5 ÷ 17.7 = 0.649 miles. The apparent distance from the distant end to the fault is, D2 = R2 ÷ R—ℓ, or 21.4 ÷ 17.7 = 1.209—.649 × .560 miles.

The fault is about half way between 0.407 miles from the exchange and 0.560 miles from the distant end, or 0.649—0.560 = 0.089 miles. The actual location is equal to 0.407 + .089 = .496 ÷ 2 = 0.248 miles or 1,309 ft. from the exchange to the fault.

The resistance of the fault caused an error in the D1 measurement of 0.407 —0.248 = 0.159 miles, and expressing this in resistance the fault itself, equals 0.159 × 17.7 = 2.8 ohms. Hence, (R3) 7.2 —2.8 = 4.4 × 596.6 = 1,310 ft. to the fault.

NOTE: The rheostat (RHE) and switch (SW), shown in *Figs. 1* and *2*, are omitted from *Figs. 3*, *4*, *5* and *6* in order to simplify these drawings.

(To Be Continued)

V V

» The girls who operate the main telephone switchboard in Berlin, Germany, are now given lessons in geography so they won't confuse foreign countries and cities.

That's because they now have to handle a steadily increasing number of international telephone calls. The average is 140 incoming and 70 outgoing calls daily.

Most calls abroad from Berlin go to Switzerland and the Netherlands. South American countries receive the bulk of outgoing intercontinental calls.

How to Build Better Rural Lines at Lower Cost per Mile

Write for Your Copy of This Free Book!

You can save material and man-hours, and build better rural lines, when you use *Crapo* High-Tensile Telephone Line Wire.

Long-span, lower-cost rural construction is described in the illustrated Manual shown above. Designed to assist telephone men in furthering their plans to extend and improve rural service, this book includes stringing sag and tension data, helpful information on construction practices, metalicizing, transposition, pole guying, and related subjects.

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Guy Protectors • Guy Clamps • Pole Struts
Clips • Straps • Hangers • Carriage Bolts
Rings • Transposition Brkts. • Eye Bolts
Pole, Corner and House Brkts. • Guy Hooks
Strain Plates • Storm Guy Straps • Lags
Machine and Hubeye Bolts
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Cable Shields • Screw Steelwing Anchors
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PITTSBURGH . . . OAKLAND CALIFORNIA . . . CHICAGO
MANUFACTURERS OF A COMPLETE LINE OF HARDWARE
FOR TELEPHONE REQUIREMENTS SINCE 1900

Practical Public Relations

(Continued from page 17)

is about as practical a problem as any business faces, for public opinion is a highly practical consideration, which in the long run can mean the difference between success and failure for a company, whatever it sells.

Business is the means of producing things men live by—the necessities and conveniences of life, our entertainment and our luxuries. It is the very essence of life and the most useful profession of mankind.

Yet, the public relations of business in general has been the poorest in the world in recent years. Business has been on the defensive—it has been the scapegoat and whipping boy.

In some measure, perhaps, it has been business's fault. The excitement and pressure of making use of the rapid mechanical and electrical inventions of the last two or three generations concentrated most business attention on technical improvements to a degree that perhaps obscured the human relationships between business and its employes and the public.

Men felt that if they produced cheaper and better services, perhaps the public ought to be satisfied with that. This turned out not to be so. Experience has proved that it is not enough to run the business in the public interest, it is essential also to explain the *facts of the business* and the *problems surrounding* it so that the public *sees* that it is being run in their interest.

I am sure that you will agree with me when I say that perhaps one of the best illustrations of a subject about which there is a pathetic lack of knowledge today is finance and the part that it plays in making our economic wheels go round. Perhaps in talking about finances, we use too many $64 words and surround the subject with an air of great mystery. Perhaps, we haven't been successful in interpreting the subject in terms the average man can understand.

There is also great ignorance on the matter of profits, and the profit motive is often painted as an evil thing—directly against the interests of the working man.

A survey conducted among working people by Opinion Research Corp. showed that most workers think they get only 25 cents out of every corporate dollar which is spent for wages, salaries and dividends. Most of them

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Plant Training Supervisor, Southern Bell Telephone & Telegraph Co.

Volume I is a simple yet comprehensive treatment of the normal thought process applied to engineering problems. This volume also sets forth the principles of logical analysis in the light of emotional bias and other disruptive factors and explains how these may be applied, in writing, to engineering presentations.

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A New book for your job instructors.

Management, as well as each Department Head, Supervisor, Foreman, or Trainee realizes today the importance of proper and efficient job training.

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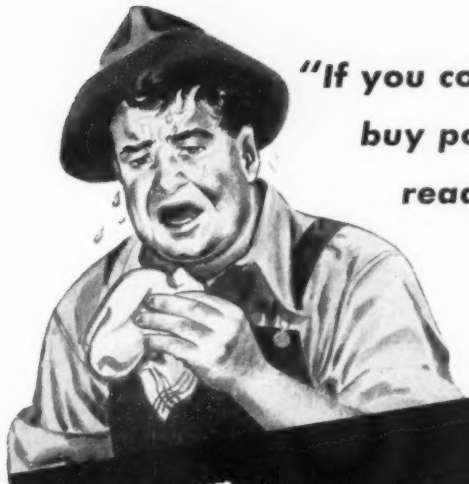

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Cheer up— with AMERTEL 135 you can cut out half of your post hole digging

● Poles and post hole digging are an expensive part of telephone line construction. But you can cut these costs in half by using U·S·S Amertel 135. The high tensile strength of Amertel permits you to double the span length in comparison to that used for the old BB wire. This means fewer insulators and less pole-line hardware. Some companies report a savings in total construction costs as high as 30%.

Another plus value you get because of Amertel's high strength is a greater factor of safety. There is less danger from sleet storms and high winds. In addition, Amertel 135 has excellent voice transmission characteristics and low electrical resistance.

To reduce maintenance even farther, many companies are installing PFT Preformed Armor Rods which effectively dampen vibration and protect the conductor at its most vulnerable point—the support.

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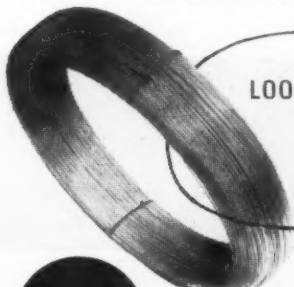

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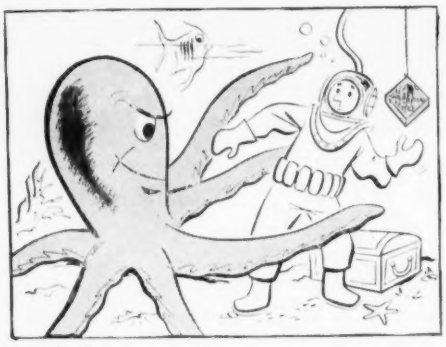
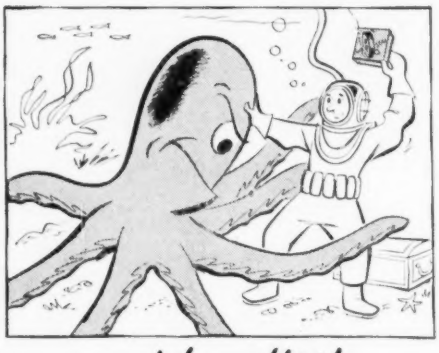


You can do a lot



with a little

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think that 75 cents out of every dollar goes to management and the stockholders. The facts are that after companies pay for materials and other essential needs, the workers get 87 cents and management and stockholders 13 cents out of every remaining dollar. The same survey revealed that most workers and the general public think that industry makes from 20 per cent to 25 per cent profit. Both believe 10 per cent would be a fair rate of profit.

In a very real sense, then, we in the telephone business, as well as those in all other businesses, are facing a great crisis. At no time in our history, perhaps, was it more important that our employes and the man in the street understand the fundamentals of the business system that has made this country the most powerful in the world and brought its citizens the world's highest standard of living.

The average business man knows our economic system is the best anyone ever thought up. He knows how efficiently it can work to produce more goods for more people. He knows what a small portion of its financial rewards go to stockholders' profits and management salaries as compared to workers' wages. So he assumes that his employes and the great non-business public know all these things. But the facts prove that they don't.

It seems to me that the challenge we face is that we must all spend more time thinking of people and what we can do for them. We need more human contact. We must cultivate the common touch as never before.

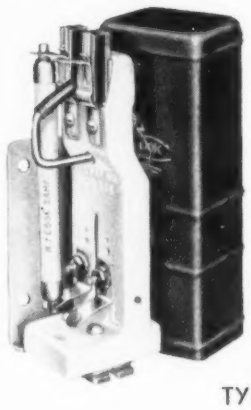
Business men must get out of their offices — offices that have been called the ivory towers—and get down where their employes are, into the community and onto the popular rostrum where people can see them. The public must see us in action, speaking openly and proudly of our operations, telling our story often in terms they can understand.

Perhaps it may be expressed that the *humanities* of business in this age have become more important than the *techniques of business.* Each business and industry has to sweep the public misunderstandings and false notions off its own front walk. Thus will the pathway be cleared for popular appreciation of the important role of all business in our freedom and our way of life.

This, then, is a job for all business! All over the world—even from some elements in our own country—the economic system that has made us the greatest nation in the world is under attack.

COOK

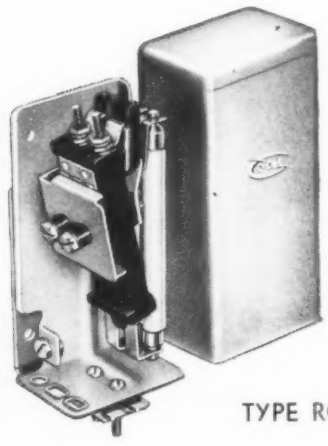
SUB-STATION PROTECTORS



TYPE O

The Type O single circuit protector, equipped with one pair of fuses and one pair of high potential dischargers are unexcelled for both indoor and outdoor use.

O-7 with A-7 Wood fuses
O-9 with A-9 Lavite fuses
O-12 with A-12 Lavite fuses
O-44 with A-44 Wood fuses



TYPE RO

The Type R Sub-station Protector Mounting is available for two applications: Type RO for outside mounting is equipped with bracket and heavy zinc weather-proof hood and the Type RI (without hood) is for inside mounting. (Type R uses Type H Protector Mounts)

In stock for immediate shipment.

BUCKEYE

TELEPHONE & SUPPLY CO.

COLUMBUS, OHIO

Each of us—in his own way—has the task of helping to prove *by results* that this economic system that has given us so much is still superior to any other.

If a business has a good product or service and strives constantly to make it better; if it prices it fairly; if it pays good wages and treats its employes so that they have pride and satisfaction in their work; if it strives continuously to keep all employes informed about the facts and objectives of the business; if it manages its corporate affairs in such a manner as to merit community and public approval; if it keeps the public—customers, potential customers and everyone affected directly—if it keeps all of these groups informed of the company's objectives and actions; then I think there is no question but what it will have good public relations.

But more than that, it will be utilizing the practical tool of public relations to demonstrate the effectiveness of private business in a democracy. And this in the long run is a demonstration of the strength of democracy itself.

I hope I have not given the impression that I consider myself, my company or the Bell System to be the world's greatest authority on public relations. I want to assure you that none of us in the Bell telephone companies has any such feeling.

My position is simply this:

For many years, many people in the Bell System have been working on this problem. We have put a lot of time and thought and hard work into it. We have done a lot of experimenting, a lot of testing and a lot of double checking.

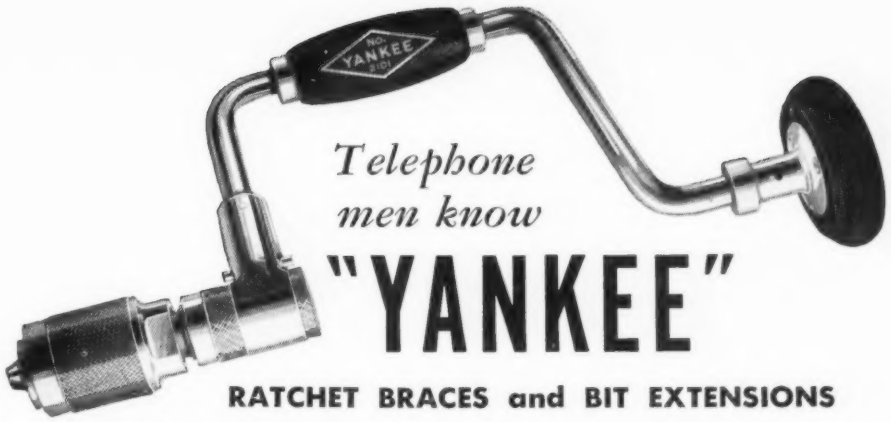
Out of all this, we think we have "proved in" some principles and some techniques. If they work for us, we think they may work for others, and if we can be helpful by passing along what we have learned the hard way, we are happy to do it.

But I want to reiterate that we don't think we have found the last word on this subject and we are going to keep right on working at it. We are receptive to new ideas and we welcome them from any direction.

(The foregoing is an address presented before the recent North Dakota convention.)

V V

» The world's telephones attained the 19 million mark in 1919; yet, during the last 10 years alone, the United States has increased its number of telephones by more than 19 million.



Telephone men know

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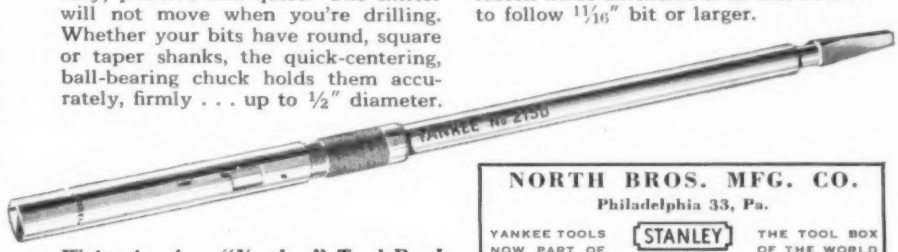
RATCHET BRACES and BIT EXTENSIONS

"Yankee" Ratchet Braces and Bit Extensions are old telephone company friends. Maintenance and installation men know from years of using them the sturdy stuff they're made of, the fine way they're made and how much these tools ease up a job.

The No. 2101 Brace was made with an installer time ticket in mind. It has the famous "Yankee" Ratchet that's easy, positive and quiet. The shifter will not move when you're drilling. Whether your bits have round, square or taper shanks, the quick-centering, ball-bearing chuck holds them accurately, firmly . . . up to ½" diameter. You bore true and fast because the patented sweep handle cancels out excessive play or binding. Practically unbreakable hard rubber handles.

The No. 2150 Bit Extension holds square shanks firmly in an inner socket. Chuck is constructed to accommodate all types of square shanks securely and without jamming. Taper end of shank is accurately machined. Bit cannot loosen while extension is in use. Made to follow $1\frac{1}{16}$" bit or larger.



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Averages $6.00 Saving Per Fault

This easy-to-use Wheatstone Bridge puts its finger on faults — locates grounds, crosses or opens — enables trouble-shooters to clear lines or cables in minimum time.

A recent survey among users indicates that this Test Set saves from 1 to 8 hours in locating faults, as compared with other methods. In terms of man-hour cost of trouble-shooting, it saves an average of $6.00 per fault. From this average figure, it appears that after locating 25 faults the instrument has saved enough to pay for itself. After its 25th location, this Test Set is actually earning money.

These savings, as well as the benefits of subscriber good-will are yours with the purchase of one of these Test Sets. If more information is required, write for Catalog EF22-53-442(1).

A FREE HANDBOOK explaining methods of using this Bridge for locating grounds, crosses, opens and other faults, will be sent on request. Write for Note Book EF-53-441(1), "Notes on Fault Location in Cables."

5430-A Type U Test Set

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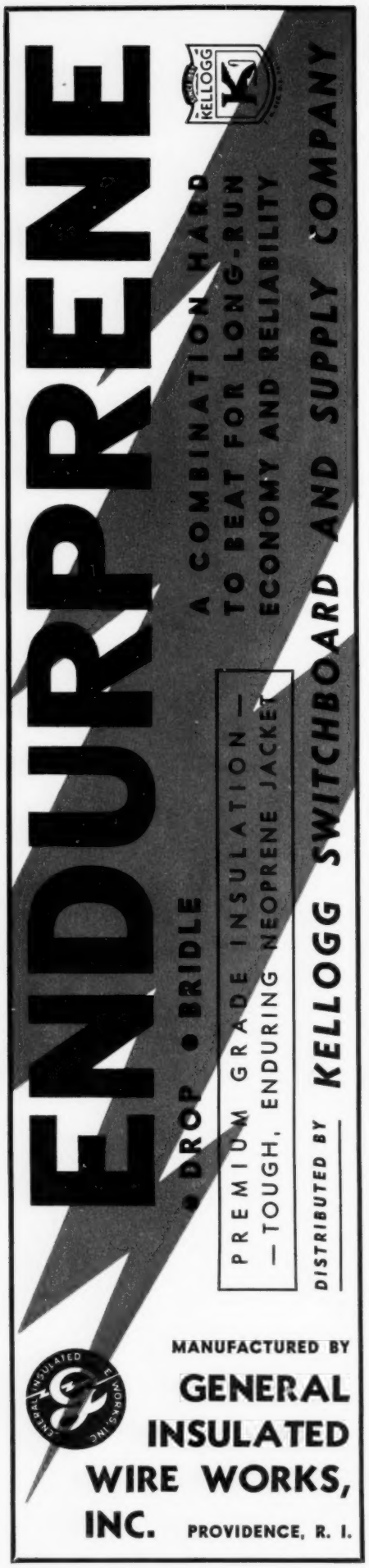
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In the Nation's Capital

(Concluded from page 14)

In addition to steps being taken by the Bell and Independent telephone industry representatives to formulate protective proposals, the Edison Electric Institute & American Gas Association have formed a joint committee to study and make recommendations on any new proposed levies. The National Association of Railroad & Utilities Commissioners claims that higher taxes would mean higher rates to the public. The net result may be congressional consideration of some special provision for regulated utilities before applying an arbitrary percentage tax for excess profits. Such a tax would penalize the dynamic growth of utility operations—more essential than ever during the period of emergency. There is danger that the sudden pressure for increasing federal tax revenues will push Congress into hasty action.

Nothing much is known, just now, about what form of protection Congress may consider with respect to the punitive application of excess profits taxes to the regulated utilities. But something will have to be done along this line to avoid serious injury to the utilities, at the worst possible time. An excess profits tax generally applied to nonregulated industry has a deliberate and proper purpose of discouraging expansion during war. But arbitrary applications of the same yardstick to regulated utilities could have a harmful result, not only for the utility owners, but also for the public interest.

Another tax angle that indirectly concerns the telephone industry, is the tax of $40 a ton on imported copper, which was suspended at the beginning of World War II, but went back into effect last July 1. It is hard to justify the decision of Congress to let this tax go back into effect on any other basis except carelessness or preoccupation with other affairs. Such a tax cannot help hastening a shortage of copper supply, needed by so many manufacturers of strategic war materials, to say nothing of telephone manufacturing companies.

Our civilian manufacturers were using more copper than our domestic mines produced even before the Korean outbreak. Now, of course, the demand for copper is shooting up like a rocket. Fighting weapons will take copper. Our stockpiles are inadequate. Add to this the fact that South America, especially friendly Chile, is unnecessarily insulted by this act which slams the door in her face. Copper export is one of the main sources of Chilean revenue, while Chile is one of the main sources of our copper import. The House Ways and Means Committee has already approved a bill to suspend the tax for a year.

New Rural Telephone Co-op Loan

On July 28, the Rural Electrification Administration made a telephone loan authorization to a cooperative in North Carolina. It is the first telephone loan approved for the Tar Heel State. Present at the signature ceremony (in the office of Claude R. Wickard, REA Administrator) were Senator Graham and Representatives Doughton, Cooley, and Dean—all of North Carolina.

The loan grant, in the amount of $518,000, went to the Yadkin Valley Telephone Membership Corp. of Yadkinville, N. C. The loan will be used to provide modern dial service to 2,456 new subscribers over 528 miles of new line in the area of Yadkin, Davis, and Iredell counties. There is supposed to be no existing service in this area, at this time. The system is also said to have a subscriber potential of 2,800, fulfilling area coverage requirements of the Rural Telephone Act.

Answers to Questions on Page 26

(1) This action is necessary for subscriber satisfaction and increased revenue.

(2) Such visits are highly recommended for the solution of mutual problems.

(3) Jack markings are used to show:
- (a) Party lines
- (b) Number changes
- (c) Disconnects
- (d) Pay stations
- (e) Auxiliary lines

(4) The headset should be adjusted so that the mouthpiece is within a half inch of the lips.

(5) The condition of the following should be observed:
- (1) Cords
- (2) Plugs
- (3) Keys
- (4) Signals
- (a) Drops
  - (1) Subscriber
  - (2) Ring-off

or (b) Lamps
- (1) Subscriber
- (2) Cord

Employes and Princeton citizens watch H. B. CRANDALL, president, break ground for the new exchange building of the Illinois Allied Telephone Co. A. E. HENRY, manager, assists Mr. Crandall.

Illinois Allied to Convert Princeton to Automatic

The Illinois Allied Telephone Co., Princeton, Ill., recently broke ground for the construction of a new central office building to house automatic equipment to be installed at the Princeton exchange.

The central office building will be of brick and tile, one-story construction. In addition to the office building the company is constructing a new warehouse and garage building.

A contract has been let to the Automatic Electric Co., Chicago, for 1,600 lines of local exchange equipment which provides 300 additional lines with which to serve people who are waiting for service, to provide lines to subscribers who desire a better grade of service and to reduce the number of subscribers on the rural lines.

The company has ordered also four additional long distance positions which, with its present eight positions, will provide 12 operators' positions for handling long distance and county calls.

Plans provide for the rehabilitation and enlarging of both the city and rural plant, which in addition to pole and open wire construction, includes 14.2 miles of underground cable. The estimated cost of the program is $450,-264.

V V

Discuss REA Telephone Loan at Manfred, N. D.

A meeting to discuss REA telephone loans was held by farmers around Manfred, N. D., recently.

On hand to conduct the discussion and answer questions was Albert Uthe, REA telephone fieldman from Bismarck. Also present was E. M. Arntson, manager of the Tri-County REA Co-op., and County Agent Chester Reiten.

Kinsella Named By Ashtabula, Ohio, Company

Richard W. Kinsella has been appointed superintendent of maintenance of the Ashtabula (Ohio) Telephone Co., it was announced recently.

He replaces Howard M. Wright, maintenance superintendent since 1924, appointed manager to succeed James W. Bonnar who announced his retirement on June 23.

V V

>> Someone has said that a man is drunk when he feels sophisticated and can't pronounce it.

TELEPHONE RINGING BY FREQUENCY CONVERSION

The TELERING is a small, simple, highly efficient ringing machine at the remarkably low price of $34.50

Size: 4 x 4½ x 10 Weight: 8 Pounds

TELERING MODEL R

The TELERING supplies ringing current by the direct conversion of power line frequencies.
Voltage Range for all purposes, Central Offices and Private Branch Exchanges.
Considering the all inclusive features of this set there is no substitute.

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FULL LENGTH TREATED *NORTHERN* WHITE CEDAR

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TWO MORE L·E·S· BARGAINS

As usual we again take the lead in money-saving offers to the industry. Here are two for the line department. A timely offering.

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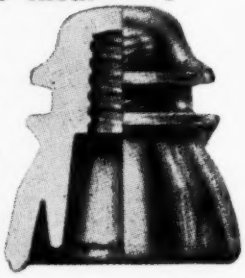

Hemingway No. 20—with extra deep wire groove and double petticote. Sheds water fast — Sets low on pin. An extra quality value —Lots of 500 only.

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1500 to 5000 pcs. ..... 5.49 C
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F.O.B. Indianapolis. Wgt. 1240 lbs. per M

Locust Pins

Signal Corps. spec. PF. 59. Sound seasoned locust 8" long, fit a 1¼" hole. Packed in boxes or bags. Lots of 500 only. A real bargain.

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1500 to 5000 pcs. ..... 3.49 C
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Better wire your order today to avoid disappointment.

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Form Service

- New low prices on the standard telephone forms as used throughout the telephone systems. A complete line of "TOLL TICKET" forms including 1-A and 2-A out, 1-L out, 2-B in.
- We specialize in Subscriber's bills. Send us a sample form for a free cost estimate.

WESTWOOD PRESS

DEPT. A • NEWTON, IOWA

FWD Announces New Line of Truck Bodies

A completely new line of utility and telephone line construction and maintenance bodies, featuring a multiple choice standard auxiliary equipment system, has just been announced by The Four Wheel Drive Auto Co. The new line of bodies is especially designed for use with FWD's new, recently announced Model LD four-wheel drive chassis. (See cut).

The basic construction body is a platform body built of 12-gauge safety tread steel plate. Strong and rigid, it measures 90 ins. wide with a standard length of 10 ft. and optional lengths, either shorter or longer, available. By use of the multiple choice system, the operator will be able to select and mount the auxiliary equipment to exactly fit his requirements.

For the operator requiring winch and derrick facilities, the body is provided with winch openings and derrick mounting brackets. Locker compartments may be mounted on either side of the platform body, either above or below the body. Large and roomy, the compartments are strongly fabricated of 14-gauge steel. They are 19 ins. high by 14 ins. deep. Standard length of top mounted locker is 56 ins. with optional lengths either longer or shorter. Underbody lockers may vary upward in length from three feet depending on the wheelbase of the chassis.

The operator may also specify a wide variety of bins and separators in the lockers to hold the material required for his particular jobs. Top mounted lockers are on eight-inch angle-iron legs to provide room beneath for derrick tubes and to facilitate winch operation.

Other optional equipment includes a boring machine, cab protector and rack bar support and many special items for specialized operations.

The new model U9 maintenance body features traditional FWD strength and modern, streamlined appearance. Outside dimensions are nine feet long by 90 ins. wide. The three section, all-steel top protects body load and telescopes to provide space for winch and derrick operation.

Large and roomy side compartments —14 ins. deep—feature both vertical and horizontal doors for ease in reaching equipment. A winch opening is provided in the body and compartments for carrying poles and derrick legs.

The operator may select a wide variety of optional equipment including winch and derrick, special brackets, clamps and related items, compartment bins and separators and other items to fit his requirements.

V V

General Telephone Directory Holds Sales Conference

The supervisory personnel of the central and eastern areas of the General Telephone Directory Co. recently held a five-day sales conference at the Purdue Memorial Union Building in Lafayette, Ind. Everett N. Morningstar, vice president of the company, presided over the meeting, which was attended by the following persons:

Earl Thompson, Crawfordsville, Ind.; Leland J. Mast, Chicago, Ill.; Dean R. Porter, Crawfordsville, Ind.; Everett N. Morningstar, Long Beach, Calif.; O. R. Stigall, Lubbock, Tex.; Lawrence A. Buckland, Marion, Ohio; D. E. LaMaster, Lafayette, Ind.; P. R. Padgham, Johnstown, N. Y.; E. P. L. Ritter, Erie, Pa.; R. O. Brainerd, Madison, Wis.; Marshall D. Smith, Lexington, Ky.; Fred E. Cunningham,

Erie, Pa.; Gilbert V. Sheeley, Lincoln, Ill.; Melvin C. Dikis, Muskegon, Mich.; Carl Ferguson, Jefferson City, Mo.; William Hutson, Lafayette, Ind.; C. V. Hammer, Chicago, Ill.; Edward T. Jordan, Long Beach, Calif.; David B. Simpson, Lafayette, Ind., and Henry Worth, Crawfordsville, Ind.

V V

Greenlee Introduces HydraRam Knockout Punch Driver

A new HydraRam knockout punch driver for enlarging knockouts or cutting entirely new openings for conduit up to four inches has recently been introduced by Greenlee Tool Co. (See cut).

Developing over 11 tons hydraulic pressure, it drives knockout punches through 10-gauge metal quickly, the company states. Simple to operate, the unit is portable and comes packed as a set in a metal carrying case with a compartment for punches.

The set includes a hand hydraulic pump, a high pressure hose and a ram with extension and sleeves to accommodate all Greenlee knockout punches for making holes for one-half inch up to four inch conduit. It also may be used with Greenlee radio chassis punches. The HydraRam may be purchased with or without punches.

For further information about the new HydraRam, write the Greenlee Tool Co., Rockford, Ill.

V V

Electric Products Has Bulletin On Generators, Battery Chargers

The Electric Products Co., 1725 Clarkstone Road, Cleveland, Ohio, has announced its new Bulletin 2-200, giving an over-all view of "E.P. Custom-Built Equipment for Industry."

Included in the items described in the bulletin are diverter pole motor generators and battery chargers for telephone exchanges.

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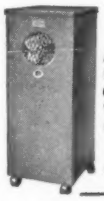

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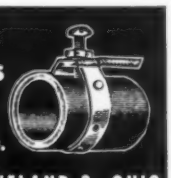

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